The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 771.---Vol. XX.] LONDON, SATURDAY, JUNE 1, 1850. [Price 6d.

EXTENSIVE AND UNRESERVED SALE OF MACHINERY AND RAILWAY PLANT, AT BERWICK-ON-TWEED.

MR. EMBLETON will SELL, BY PUBLIC AUCTION, without reserve, on Monday, the 3d day of June next, and the following days (sale to commence each day at Eleven A.M., and finish at Six P.M.), in the Yard adjoining the New Bridge, the whole STOCK of

MACHINERY AND RAILWAY PLANT,

which has been used in the erection of the Tweed Viaduct and adjoining contracts, consisting of—4 LOCOMOTIVE ENGINES, with tenders.
2 50-horse power HIGH-PRESSURE BEAM ENGINES.
1 6-horse power ditto PORTABLE ENGINE.
1 12-horse power ditto, with sawing machinery.
1 3-horse power ditto.
Also, 1 of Nasmyth's PATENT PILE-DRIVING MACHINES, all of which are in excellent working order, and in many cases as good as new.
There will also be sold 2 sets of QUADRANT PUMPS, and 1 set of powerful CHAIN PUMPS, capable of lifting 30 feet.
1 Brass FORCING PUMP; a large number of travelling cranes, jib cranes, crane chains, winches, setting poles.
3 Ram frames, with hammers for driving piles.
A large number of timber boggies, stone waggons, carts, hand and wheelbarrows.
Blacksmiths', carpenters', and quarrying implements of all descriptions.
There will also be sold a large quantity of HORSE GEAR, and about 300 tons of RAILWAY BARS, 35 and 45 lbs. per yard.

Catalogues, with description of engines, may be seen at Mr. Carstair's office, Berwick or in the yard, on the day of sale.—Berwick, May 14, 1850.

TO BE OFFERED FOR PUBLIC SALE, on Monday, the 10th day of June, 1850, at the Raven Inn, in ST. HELENS, in the county of LANCASTER, at Two for Three o'clock in the afternoon, in one or more lots, as may be then and there agreed upon, and subject to such conditions of sale as may be then and there produced, THIRTY-TWO UNDIVIDED (64ths) PARTS, or SHARES, of and in the SANKEY BROOK COLLIERY, situate in PARR, near St. Helens aforesaid, and of and in all and every the Leases, Agreements for Leases, Conveyances, and other Deeds, under which the said Colliery is now being worked, and which comprise the following seams of coal—namely,

THE HIGHER DELF. | THE ROGER DELF.
THE MAIN DELF. | THE SIR JOHN MINE.
THE ST. SEBASTIAN DELF. | THE RUSHY PARK MINE.
THE LITTLE DELF.

The above-mentioned mines are all well opened and in full operation and good working order, and producing upwards of 100,000 tons of coal annually.

They are held under various leases, and agreements for leases from various parties, for various terms, and at very reasonable rents.

It is estimated that there are upwards of 1500 large or Cheshire acres of coal, of 1 ft. thick, ungotten in the mines, and laid dry by the present winnings.

The machinery and plant is all very efficient and in good working order, and will be sold with the mines.

The collieries are situated in the township of Parr, on a branch of the St. Helens Railway, and there is likewise a branch railway laid down from them to the Sankey Canal, where there is erected a tipping machine for loading flats and other vessels, and the owners have a right to a tipping stage at the Widnes Docks for all coals sent down the St. Helens Railway.

The colliery has been established nearly 30 years, and enjoys an old and valuable connection, not only in the immediate vicinity, but also in Liverpool, and in the salt districts of Cheshire, besides an extensive steam and export trade at the port of Liverpool; and as the coals are known to be of the best quality, an opportunity is afforded to capitalists and others desirous of embarking in the coal trade, which seldom presents itself.

Any further information respecting the colliery may be obtained on application to Mr. John Mercer, land and mine surveyor, Belle Vue, Cowley-hill, near St. Helens, or Mr. C. Williams (at the office of the colliery), who will show plans of the colliery workings, or to Messrs. Ansdell and Haddock, solicitors, St. Helens.

St. Helens, May 18, 1850.

SALE OF MINING PROPERTY, STEAM-ENGINE, &c.

MR. JOHN PARKIN will SELL, BY AUCTION, at LOSTWITHIEL CONSOLS MINE, near LOSTWITHIEL, on Tuesday, 11th of June, 1850, at which the MINE, ENGINE, and MATERIALS will be OFFERED in ONE LOT; and if not sold, the STEAM-ENGINE and MATERIALS will be SEVERALLY OFFERED FOR SALE.

The STEAM-ENGINE is a 36-inch cylinder, 10-feet stroke, direct-acting, with iron cylinder case, and 11 tons boiler; all new two years since, very strong, and embracing every modern improvement.

The MATERIALS consist of 1 11-inch lift, 1 8-inch lift, complete, each 13 fathoms, 1 5-inch plunger-lift, 7 fathoms, capstan, capstan-rope, shears, horse-whim, kibbles, rods, ladders, anvil, bellows, scales, whim-rope, crabwinch, blocks, tools, with various lots of iron, timber, ropes, &c.

To be viewed any day before the sale.—Sale to commence at Two P.M. precisely.
May 27, 1850.

MONMOUTHSHIRE.

VALUABLE FREEHOLD ESTATE.—MINERAL PROPERTY, with the COLLIERY and FIRE-BRICK WORKS, and all the VALUABLE PLANT, &c.

MESSRS. FAREBROTHER, CLARK, & LYE will SELL, at Garraway's, on Thursday, June 27, at Twelve, by order of the Devisees in Trust, of the late J. F. Hanson, Esq., a very valuable MINERAL PROPERTY, situate in the Parishes of HEUL LIS and LLANTARNAM, five miles from the town and port of Newport, with communication by the Monmouth Canal, on which there is a wharf attached to the works.

The estate comprises 376 acres, and contains COAL OF EXCELLENT QUALITY, and ironstone running under the whole extent with limestone, building and paving stone, excellent manager's house, and 17 cottages; also suitable farm buildings. The minerals have been partially opened and proved, and the brick works are of sufficient extent to manufacture 200,000 fire-bricks per month, besides draining tiles. All the coal and iron measures known in this part of South Wales between the Pennant rock and the carboniferous limestone crop out on the estate.

The VALUABLE MACHINERY now used on the works will be included in the purchase. The surface rental, including cottages, is about £200 per annum. The estate is freehold, except 28 acres copyhold at a fine certain, and 87 acres leasehold for 99 years, at a rent of £13 per annum. A railway of two miles in extent, worked by self-acting inclines, has been made through the centre of the property, by which the produce of it is conveyed to the canal.

Full descriptive particulars may be had one month prior to the sale, at the works; the Cardiff Arms, Cardiff; King's Head, Newport; White Lion, Bristol; of Mr. C. F. Phillips, solicitor, 44, Lincoln's-inn-fields; of Mr. J. T. Church, solicitor, 9, Bedford-row; at Garraway's; and at Messrs. Farebrother, Clark, and Lye's offices, 6, Lancaster-place, Strand, where plans may be seen.

MINE MATERIALS FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, for the remainder of the adventurers' term, of which 20 years are unexpired therein, the valuable TIN AND COPPER MINE, called WHEAL ANDERTON, situated near TAVISTOCK, DEVON, with the ENGINE and MATERIALS thereto belonging, comprising an excellent STEAM-ENGINE, of 30-inch cylinder, nearly new, 8-feet stroke in cylinder, and 7-feet in shaft, boiler, 7 tons, cast-beam, and case.

Also, a 22-inch cylinder ROTARY-ENGINE, new, boiler, 6 tons, drawing machine, and cast-iron stamps—axle attached, to carry 12-heads.

A good WATER-WHEEL, 36-feet diameter, and 3½-feet breast, cast-iron axle, with stamps axle (oak), to carry 12-heads.

PITWORK from surface to the 90 fathom level—consisting of 9 and 8-inch pumps, 8 and 7-inch plungers, 2 H-pieces, with clackdoors, windbores, &c., 1 8-inch, 3 7-inch, and 1 6-inch working-barrels, all of which are in the best possible condition—the greatest part new within the last three years.

Capstan, shears, balance-bob, main-rods and bucket-rods, 60 fathoms of 10-inch and 60 fathoms of 8-inch rope, 150 fathoms ⅞-inch, 9 1-16th inch, and ¾-inch chain, horse-whim, pulleys and kibbles, smiths' bellows and anvil, smiths' and miners' tools, dressing tools and sheds, and all other necessary materials to carry out extended operations of the mine.

The attention of miners and adventurers generally are particularly invited, as near £7000 worth of tin and copper has been raised from the mine during the last three years, and the mine is now in work.

For inspecting the mine, application should be made to Capt. Carpenter, on the mine; and further particulars by letter, addressed "Wheal Anderton Committee, Royal Hotel, Plymouth."

Dated Royal Hotel, Plymouth, May 28, 1850.

TO CAPITALISTS,—More particularly those concerned in MINING OPERATIONS.—WILL BE SOLD, if a suitable offer is made, in the county of CORK, a most desirable PROPERTY, containing SIX HUNDRED and FIFTY-EIGHT ACRES, statute measure, let to one solvent tenant, at the yearly rent of £420 per annum, for the term of 99 years, 20 of which have expired.

The property is situated within 4 miles of the post town of CLONAKILTY, and the lands are of the first quality; the rent is punctually paid by the lessee, who has an interest of fully £300 a-year out of the lands, and the poor-rates have never exceeded 2s. 3d. in the £1.—To a Capitalist or Mining Company this would be a most valuable investment, as there is no doubt of there being both COPPER and LEAD MINES on it. The Royalty would be sold with the property—the great advantage of having the Royalty to such parties is too apparent to require comment.

Should a liberal offer be made to the proprietor, Sir John Barry, Bart., Sandy-Mount, Dublin, he will sell the property under the "Encumbered Estates Act," which will expedite the sale, and ensure the title; but ample security must be given as to the honourable intentions of the parties offering, as there is no necessity for the sale of the property, and it will not be sold without the full value of it is given.—Further particulars will be given on application to Sir John Barry, Bart., Sandy Mount, Dublin.

MR. JAMES CROFTS, of No. 4, KING-STREET, CHEAPSIDE, takes the liberty of soliciting the attention of CAPITALISTS (and more particularly so in consequence of the depressed and, in his opinion, still unsafe condition of railway property) to the MINING INTERESTS of GREAT BRITAIN, as offering, at this time, the SAFEST MEDIUM OF INVESTMENT of any adventures of an acknowledged speculative character, and TENDERS his SERVICES generally for the PURCHASE or SALE of MINING SHARES.

Mr. CROFTS has at present FOR SALE SHARES in the following Adventures:—

ROCHE ROCK (Tin), in 5000 shares—Cornwall.
HEIGNSTON DOWN CONSOLS (Copper), in 6000 shares.
BEDFORD UNITED (Copper), in 4000 shares.
SOUTH TAMAR CONSOLS (Silver-lead), in 9000 shares.
EAST TAMAR CONSOLS (Silver-lead), in 9000 shares.
WEST PROVIDENCE, in 512 shares.
ESGAIR LLEE (Lead), in 1280 shares—South Wales.
BODCAL, or SOUTH WALES (Lead and Copper), in 2000 shares.
LLWYNMALEES (Silver-Lead), in 1000 shares—Cardiganshire.
METROPOLITAN STONE COMPANY, in 100 shares.
TREGEAR CONSOLS (Silver-Lead), in 5000 shares.
WHEAL TRESCOLL (Tin), in 1100 shares.
CWM ERFIN (Lead), in 1000 shares—South Wales.

In addition to the above, Mr. CROFTS has also generally FOR SALE SHARES in the MINES managed in his OFFICE, where the Cost-books, Lists of Shareholders, and periodical Balance-sheets and Reports may be inspected—viz.:

LAMHEROOE WHEAL MARIA (Copper) in	2048	shares.
WHEAL BENNY (Copper)	256	"
COMBLAWN (Silver-Lead)	500	"
WHEAL VINCENT (Tin)	1000	"
WHEAL SARAH (Silver, Gossan, and Lead)	1056	"

☞ Mr. CROFTS is NOT A DEALER in SHARES for his own account, but only for principals.

LEAD MINE.—A most VALUABLE SHARE TO BE SOLD in a MINE now in operation, and which, from its increasing dividends, is expected to realise within 12 months upwards of 25 per cent., after payment of all expenses.—Full particulars may be had, and the engineer's report, made in March last, can be seen on application to Mr. William Berry, solicitor, 36, Southampton-buildings; or Mr. Orpwood, auctioneer, Artillery-place, Finsbury-square.

TO CONTRACTORS, BUILDERS, AND OTHERS.

TO BE SOLD, BY PRIVATE CONTRACT, the ENGINES, MACHINERY, &c., which have been used in the erection of the Britannia-bridge, consisting of ONE 40-horse HIGH-PRESSURE ENGINE, with 18-inch cylinder, and 3-feet 6-inch stroke, with boiler complete, drum and hoisting gear; ONE 25-horse HIGH-PRESSURE ENGINE, with 14-inch cylinder, and 2-ft. stroke, with portable boiler complete, drum and hoisting gear; travelling cranes, landing cranes, setting machines, single and double purchase crabs, blocks, chain and tackle of every description, and of first-rate quality.—Application to be made to Messrs. B. J. Nowell and Co., at the works, Britannia-bridge, Bangor, North Wales.

ROLLING MACHINE FOR SALE.—A NEW powerful ROLLING MACHINE, adapted for Flatting Mills, or Embossing Rolls; foundation plate, bolts, band, and gearing, all complete—capable of carrying seven inch rolls.—Apply to Mr. Newton, 10, Silver-street, Wood-street, London.—Price £50.

EAST OF SCOTLAND MALLEABLE IRON COMPANY.—The Directors have been authorised to RECEIVE OFFERS for the PURCHASE, or LEASE, of the MALLEABLE IRON WORKS at DUNFERMLINE—comprising a STEAM-ENGINE, of 80-horse power, working the machinery, consisting of FORGE and 2 PUDDLE BAR TRAINS, of 16 inches diameter, HAMMER and PATENT SHINGLING MACHINE; also a 16-inch MERCHANT BAR or RAIL MILL, a 12-inch MILL, for ordinary sized merchant bars, and an 8-inch GUIDE MILL, 13 PUDDLING FURNACES, and 6 MILL FURNACES—the whole capable of producing 120 tons of bar-iron weekly.

A REFINERY STEAM-ENGINE, of 45-horse power, with blowing apparatus, complete, and two fires erected.

A complete SET of WORKSHOPS, containing a 20-horse power STEAM-ENGINE, driving a powerful roll-turning lathe, and blowing apparatus for smiths' fires.

A PUMPING and CLAY MILL STEAM-ENGINE, of 16-horse power, used for the manufacture of fire-brick, and pumping water for supply of engines.

Also, in course of erection, a STEAM-ENGINE, of 80-horse power, intended to drive the mills apart from the forges, having strong cast-iron framing laid down, and machinery suitable on the premises, which could be brought into active operation in a short period.

Together with the necessary TOOLS, LOOSE MACHINERY and STOCKS, of different kinds.

Offers will also be received for the PURCHASE of the ESTATE of TRANSY, consisting of about 107 imperial acres, with elegant MANSION-HOUSE and PLEASURE GROUNDS, situated about half a mile to the east of the town of Dunfermline.

Applications may be made to Mr. James Inglis, Chairman of the Company; or to Johnstone, Russell, and Craig, writers, Dunfermline.

Dunfermline, March 15, 1850.

ROBERT MUSHET'S IMPROVED CAST-STEEL.—Engineers and Manufacturers in general are respectfully invited, to MAKE A TRIAL of this IMPROVED STEEL, which will bear more heat in the working, and which is calculated to endure more hardship, than any Cast-Steel hitherto offered in the market. For TURNING and PLANING TOOLS this improved Cast-Steel will stand better, and keep its edge longer at double or even triple speed, than the best Sheffield Steel at ordinary speed.

Samples, or any larger quantities, drawn to sizes, may be had on application, by letter, to "The West Dean Steel Company," Coleford, Gloucestershire.

TOUGHENED CAST-IRON—STIRLING'S PATENT.

No. 1—For SMALL and MEDIUM CASTINGS.
No. 3—For HEAVY CASTINGS.
No. 3 (*Extra*)—For ROLLS, HEAVY SHAFTS, and VERY HEAVY CASTINGS.

The above is by far the strongest Cast-Iron made, and is now being extensively used where strong castings are required.

Further particulars may be obtained on application to
Messrs. GARDEN & MACANDREW,
27, Queen-street, Cheapside, from whom also the IRON can be PROCURED.

UNSTON IRON WORKS, NEAR SHEFFIELD.—Messrs. RANGELEY, WRIGHT, and Co. invite the attention of IRON MANUFACTURERS, IRON FOUNDERS, &c., to their DERBYSHIRE PIG-IRON (smelted entirely with coke), which they can with confidence recommend for all purposes where purity of metal, combined with tenacity or strength, is an object. Their No. 3 pig-iron is sufficiently fluid for all descriptions of foundry-work. PIPING made from this quality will admit of almost any amount of hydraulic pressure. As a mixture with tender irons, or for purposes requiring great strength, their No. 4 is particularly adapted. For FORGE PURPOSES, the loss from waste in cinder, &c., is much below the usual average, and the product a very superior iron.

Messrs. R., W., and Co. also beg to inform RAILWAY CONTRACTORS, ENGINEERS, GAS and WATER-WORKS COMPANIES, BUILDERS, MILLWRIGHTS, &c., that having purchased an extensive assortment of models and apparatus from Messrs. Wm. Graham and Co., of Milton Iron-works (who have declined business), and having engaged experienced workmen from that establishment, they are in a position to furnish ALL DESCRIPTIONS OF CASTINGS, suitable for the above branches, and at moderate prices.

MENDIP HILLS MINES COMPANY.—At the Annual General Meeting of Shareholders in this Company, held at the offices, Salvador House, London, G. H. BARWELL, Esq., in the chair.

The following resolutions were passed, unanimously:—

Resolved,—That the Reports and Accounts now read be received, adopted, and entered in the Company's Cost and Transfer Book.

Resolved,—That the best thanks of this meeting be given to the Chairman, for his almost constant and personal attention to the works during the last year, and for the readiness with which he has entered into explanations to-day on matters connected with the undertaking.

INDURATED AND IMPERVIOUS STONE, CHALK, &c.—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHISONISED MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large.
Apply to HUTCHISON & CO.,
140, Strand, London; or Tunbridge Wells, Kent, and Caen, Normandy, stating name, address, and capital at command.

N.B.—Houses cured of damp. The produce of soft stone quarries, chalk, plaster of Paris, wood, pasteboard, and all absorbent materials indurated to resist frost, vermin, &c.
LICENCES GRANTED.

PATENT IMPROVEMENTS IN CHRONOMETERS WATCHES AND CLOCKS.

E. J. DENT, 82, Strand; 33, Cockspur-street; 34, Royal Exchange (clock tower area), Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each.
DENT'S PATENT DIPLIDOSCOPE,
or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use is. each, but to customers gratis.

WANTED, in a MANUFACTURING BUSINESS and IRON TRADE, A PARTNER, who can command from £6000 to £8000, and who may be actively engaged or otherwise. The business is well established, and in full operation, yielding good profits, and capable of considerable improvements.—Communications, addressed to "A. B.," 25, Basinghall-street, London, will have prompt attention.

N.B.—None but principals will be treated with.

WANTED, by a person of practical experience, a SITUATION to MANAGE COAL MINES. The advertiser is well acquainted with Land and Colliery Surveying, Mapping, &c.; would have no objection to engage with a respectable Mining Engineer at home or abroad. Respectable reference will be given.—Address (post-paid) to "L. W.," at the office of the *Mining Journal*, 26, Fleet-street.

WANTED TO PURCHASE, a SECOND-HAND HIGH-PRESSURE NON-CONDENSING, or a CORNISH, STEAM-ENGINE, with TWO BOILERS, each sufficient to work the engine; the power to be about 40 or 50-horse. Also, a PUMPING APPARATUS. A description of the engine and pumping apparatus to accompany the tender—stating maker's name, the condition of the machinery, and price at the works.—Address "A. B.," Queen's Hotel, Birmingham.—May 29, 1850.

WANTED, ONE HUNDRED POUNDS.—A small master, of active and persevering habits, engaged in a branch of the Hat Manufacture, is desirous of meeting with an active person having a small capital, by which he might realise a considerable advantage, and become versed in a useful and profitable business, the Advertiser being straightened for the command of sufficient capital to meet his growing business. He has accumulated a working-stock of upwards of £40, and has excellent manufacturing premises, at a low rent, with every convenience for a large business. The dealings are with houses where the bills are paid regularly, and the profit to be derived from a PARTNERSHIP would be considerable; this would suit some industrious person wishing to make the best advantage of a small sum of money employed in safe transactions.—Address (post-paid) to "A. F.," care of Mr. Godwin, newsman, Pitt-street, Old Kent-road,

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TO CAPITALISTS.—A Civil Engineer, of considerable experience, is desirous of meeting with a GENTLEMAN who is ready to ADVANCE from TWO HUNDRED to THREE HUNDRED POUNDS to secure PATENTS for TWO very VALUABLE INVENTIONS, which, when brought before the public, will prove of great demand.—Address "F. R. S.," care of the Editor of the *Mining Journal*, 26, Fleet-street, London.

IMPORTANT INVENTION.—PREVENTION OF EXPLOSIONS.—A GENTLEMAN has lately INVENTED an entirely NEW METHOD of PREVENTING the EXPLOSION OF BOILERS, no matter to what degree of pressure the steam is generated. As the necessary apparatus can be applied at a small expense to all sorts of boilers as they at present stand, the invention must realise a handsome return to any one wishing to PURCHASE the INVENTION, which is not patented by the inventor for want of the necessary funds. The advertiser considers that it will cause material saving in the expenditure of fuel, but on this point he will make no positive statements at present.—Parties wishing to treat for the sale of the invention wil laddress to Mr. Richard Telford, Patent Office, 17, George-street, Edinburgh.

NOTICE.—SAINT AUSTELL CONSOLS MINE.—All PERSONS having CLAIMS on the ABOVE MINE are requested to FORWARD THEM forthwith to the UNDERSIGNED for adjustment; and as it is probable there will be a balance in hand after the liabilities are discharged, I hereby give Notice to the respective shareholders forthwith to inform me of the number of shares they respectively hold, so that such balance may be apportioned and paid.
(Signed) JOHN SAMPSON, Managing Agent.
Penpillick, near St. Blazey, May 27, 1850.

BRITISH AND FOREIGN REGISTRY OFFICE.—PARTIES having MINERAL ESTATES, COLLIERIES, or MINES, FOR SALE, or SHARES TO DISPOSE OF, in DIVIDEND MINES, or OTHERS, by enclosing a list of the number and price of such shares, and particulars of such property, the same will be REGISTERED FOR SALE, and commission charged only on sales taking place. Money advanced if required.—Apply to Mr. DURRANT, 58, Lombard-street, London.

LONDON AND LIVERPOOL COMMISSION AND GENERAL AGENCY OFFICES.—Every description of COMMERCIAL BUSINESS CONDUCTED by Messrs. BRADFIELD & CO., No. 19, STRAND, LONDON, and Mr. BIRD, ST. GEORGE'S-BUILDINGS, BASNETT-STREET, LIVERPOOL.

Patentees, Inventors, and others desirous of giving publicity to New Works, will have their views vigorously worked out by parties acquainted with every detail and channel, metropolitan and provincial.—Agencies arranged, and correspondence, inquiries, collection of debts and rents, undertaken with energy and economy.

CONSULTING SHAREBROKERS—"FACTS AND FIGURES."

MESSRS. R. B. WATSON & CO., lately of Leeds, and formerly of Hull, have resumed BUSINESS, as CONSULTING SHAREBROKERS, in LONDON. In the former place R. B. W. acted as a sharebroker for 10 years, and in the latter, as a commercial broker, for 10 years.

Having drawn up the last half-yearly accounts of the principal railways, upon one uniform plan, they propose offering to investors, but not to mere speculators, their opinion of railways, founded upon these facts and figures.

For terms, and a circular, apply at No. 39, Old Broad-street.

MINING PROPERTY.—Mr. HERRON has SHARES in the best DIVIDEND MINES FOR SALE, and which will give to the purchaser 17 to 25 per cent. for the outlay; amongst others are the following:—South Tolgus, Trelawny, Devon Great Consols, South Frances, Trevisky and Barrier, Stray Park, Goginan, Lisburne, East Wheal Rose, West Buller, Mary Ann, South Wheal Basset, Botallack, United Mines, Treleigh, Tincroft, Bedford United; and in Foreign Mines—St. John del Rey, Linares, Santiago, Cobre, United Mexican, and National Brazilian Mines.
MINING OFFICES—33, CLEMENT'S-LANE, LOMBARD-STREET.

MINING INVESTMENT.—Messrs. BOXALL & CO., CROSBY HALL CHAMBERS, BISHOPSGATE-STREET, LONDON, are prepared to BUY and SELL SHARES in most of the Devon and Cornish MINES, including Tincroft, Wheal Mary Ann, Tremayne, Herodsfoor, Wheal Golden, Penzance Consols, West Polgooth, Great Devon Consols, Wheal Langford, Wheal Vincent, Wheal Franco, Wheal Trescoll, Wheal Sarah, Camborne Consols, South Plain Wood, Hennock Silver-Lead, and many others, which will give to the purchasers dividends of from 15 to 20 per cent. on present outlay.

MR. TRIPP, MINE AGENT, EXCLUSIVELY FOR PRINCIPALS, is instructed to BUY and SELL in most of the best DIVIDEND-PAYING MINES; also in NEW ONES, having present and prospective advantages.
MINING OFFICES,
ST. MICHAEL'S CHAMBERS, ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.

MR. T. A. READWIN, MINING OFFICES,
2, WINCHESTER-BUILDINGS, OLD BROAD-STREET, LONDON.

ALEXANDER & MOORE, MINING ENGINEERS,
24, ST. VINCENT-PLACE, GLASGOW.

MR. C. S. RICHARDSON, CIVIL ENGINEER, LAND AND MINING SURVEYOR.
No. 15, OLD BROAD-STREET, LONDON.

JAMES LANE, MINING SHARE DEALER,
80, OLD BROAD-STREET, LONDON.

ANGLO-MEXICAN MINT OFFICE, No. 5, Broad-street-buildings, May 25, 1850.—The Directors of the Anglo-Mexican Mint Company beg leave to notify to the shareholders that a DIVIDEND will be PAYABLE at the office, as above, on or after Tuesday, the 4th June next.—Claims to be made (printed forms of which may be obtained at the office) two clear days previous to payment.
Attendance Eleven to Three. ALFRED GODFREY, Secretary.

PEMBROKESHIRE IRON & COAL COMPANY—NOTICE OF CALL.—The Board of Directors do hereby give Notice, that they have this day passed a resolution, calling for an INSTALMENT of ONE POUND per share, payable on the 26th day of June, 1850, at the Union Bank of London, 2 Princes-street, London, and that if such instalment be not paid on or before such day, interest after the rate of FIVE POUNDS per cent. per annum will be payable on each instalment from such day up to the time when the same shall be actually paid; and that if the instalment be not paid within three calendar months next after the said 26th day of June, 1850, all the shares belonging to the person making default, in respect of which there shall be such default, and all benefit thereof, shall be liable to be forfeited.
By order of the Board of Directors, W. FOLEY, Sec.
4, South-square, Gray's-Inn, May 29, 1850.

SOUTH TYNE COLLIERY COMPANY.—Notice is hereby given, that the SECOND ANNUAL MEETING will be HELD at the Company's offices, 61, Moorgate-street, on Tuesday, the 11th June, at One o'clock precisely.
61, Moorgate-street, May 30, 1850. H. WILLIAMS, Sec.

ST. JOHN DEL REY MINING COMPANY.—The TWENTIETH ANNUAL GENERAL MEETING of the proprietors of the St. John Del Rey Mining Company will be HELD at the Company's office, 8, Tokenhouse-yard, on Friday, the 7th of June, at Two o'clock precisely.—At this meeting one director—viz., R. S. Illingworth, Esq., will go out by rotation, but is eligible to be re-elected.
8, Tokenhouse-yard, May 25, 1850. JOHN ROUTH, Managing Director.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

This Day	Asiatic—3, New Burlington-street	2 P.M.
Monday	Entomological—17, Old Broad-street	8 P.M.
	Chemical—142, Strand	8 P.M.
Tuesday	Linnæan—Soho-square	8 P.M.
Wednesday	Geological—Somerset House	8½ P.M.
	Royal Botanic—Inner Circle, Regent's Park	3½ P.M.
Thursday	Zoological—11, Hanover-square	3 P.M.
	Antiquaries—Somerset-house	8 P.M.
Friday	Royal Institution—Albermarle-street	8 P.M.
	Botanical—20, Bedford-street, Covent-garden	8 P.M.

ROYAL INSTITUTION.

On Saturday, Dr. Faraday delivered the fifth lecture of his present course, and took for his subject "the Philosophy of a Kettle." The phenomena of boiling were illustrated by a variety of experiments, for the purpose of showing in what manner the formation of steam by heat, and the presence of air in water, co-operate to produce these phenomena. The flame of a spirit lamp, for example, having been applied to a glass vessel containing water, bubbles were seen to form at the bottom, and to rise for a short space nearly of the same size; but when they arrived at the colder stratum of water above, they contracted, and very minute bubbles only reached the top. As the water became more heated by the lamp, the bubbles were larger and rose higher, till, having attained the boiling point, the steam formed at the bottom of the vessel rose uncondensed to the top, in a rapid succession of large bubbles, producing the phenomenon of boiling. The very minute bubbles which rose to the surface of the water when it was only partially heated were stated to be composed of air separated from the water at the bottom by heat, and not liable, like steam, to be condensed by the colder water above. The "singing" of a kettle, long before it boils, is caused by the evolution of the air in this manner. The air contained in water, and which can only be totally separated from it by very great care, performs important uses. It serves, as Dr. Faraday said, to separate the particles of water from each other, and its numerous globules, diffused imperceptibly through the fluid, operate like so many minute wedges in forcing the particles apart. Some researches by continental philosophers on the properties of air contained in water and other fluids had led to very curious results. Water, from which air has been carefully excluded, may be heated to a temperature of 270° Fahrenheit, without boiling; which heat is sufficient in ordinary circumstances to raise water to a pressure of three atmospheres. When, however, the temperature is increased above 270°, the water suddenly boils with a most violent explosion. Dr. Faraday said it would not be safe to perform the experiment in that form, but the same phenomenon occurs when water is dropped into highly heated oil, as he exhibited; and the continued small explosions that ensue when the wick of a candle is moistened may be attributed to the same cause. As an exemplification of the manner in which the particles of water adhere when air is not present, some water, in a bent tube, from which the air had been removed, was exhibited. The liquid in each branch of the tube remained at different heights, and it required a smart blow to bring it to a level in each. Liquids possess the peculiar property, when exposed to a highly-heated surface, of assuming a spheroidal form, by means of which they are prevented from coming into contact with the heated body, and remain considerably cooler than in a less heated vessel. M. Boutigny, the French chemist, had succeeded in illustrating this property of fluids in many remarkable ways, some of which Dr. Faraday exhibited. A small ingot of polished silver, heated red hot, was immersed in cold water, without any sensible effect at first, but when the silver had become partially cooled, a violent ebullition took place. Some water and some iodine were placed in separate highly heated platinum saucers, in which they were seen to have assumed the spheroidal form, and no perceptible evolution of steam or vapour ensued. When, however, the source of heat was removed, the violet-coloured iodine vapour issued abundantly, and the water flashed into steam. By a modification of the experiment, M. Boutigny had succeeded in freezing water, and even mercury, in red hot vessels. The "fur" which is formed in kettles and boilers, and the mode of its removal, constituted the concluding branch of Dr. Faraday's subject. The fur deposited in kettles consists of carbonate of lime, which is deposited from water by the process of boiling, and the extent to which this matter will accumulate was shown by various specimens extracted from kettles and steam-engine boilers. The incrustation of boilers, indeed, sometimes becomes so great as to form a serious impediment to the working of the engine; and, in one specimen, taken from a boiler, the crust had become two or three inches thick. On the lecture table were also placed some curious medallions, which had been formed by the deposition from a calcareous spring in the Apennines. The inconvenience arising from this deposition in kettles and boilers may, however, be readily removed by a recent practical adaptation of chemical principles. By the introduction of muriate of ammonia (sal ammoniac) into a furred kettle, the muriatic acid combines with the lime, and forms a soluble product, and in this manner the fur may be washed out.

PROFESSOR ANSTED'S LECTURES ON PRACTICAL GEOLOGY.

The lecture, at the Royal Institution, on Thursday, May 23, related to the operations by which coal was raised from the strata in which it was formed below the surface. The first thing was to discover precisely the direction, character, and lift of the seam. There were, in some few instances, in Staffordshire, crop-workings, which took place when the material cropped out in the side of a hill; but they were hardly worth a remark. Coal near the surface was never so good as when it was covered up; the effect of exposure to the atmosphere being to remove its gaseous products, and to increase the admixture of earthy matter. Crop-workings which, to an unpractised mind, would appear the simplest and best, were not used on a large scale. The general rule was to work in an upward direction, in order that all the water which collected in the workings might drain off; if a different course were pursued, it was obvious that the water would collect in the deepest part of the mine, and give great trouble.

The learned lecturer then proceeded to describe, by a series of diagrams, the position of the coal beds in the Newcastle district, where they are tilted, or broken, and the course necessary to obtain a knowledge of all the geological peculiarities of any particular part in which it was intended to search for coal. After learning all that could be collected from data already known, and carefully observing the dip or angle of the seam which cropped out, numerous borings were necessary, and thus gradually a perfect and accurate knowledge was obtained. It was anything but good economy to have too few borings, as the result might be that the shaft would be placed in the very worst possible site. These borings were, of course, vertical; but there were sometimes horizontal borings, to see what were the nature of the faults. Sections being thus obtained by borings, and the geological mass well studied, the next thing was to sink the shaft, which was nothing more than a large well, generally from 12 ft. to 15 ft. in diameter. When it was considered that this was the passage through which, perhaps, hundreds of acres of coal were to be brought to the surface, and all the materials to obtain the coal, and the workmen, were to pass up and down, the size of the shaft would appear to be well fitted for those purposes. Sometimes only one shaft was sunk, but that was bad mining; and in the Newcastle coal-field, of which he was now speaking, there were more frequently several shafts, in situations carefully selected with the view to their assisting each other. The expense of sinking a shaft was a serious matter, depending, however, much upon the nature of the rock to be passed through—its hardness, its softness, its depth, and diameter, and most of all, the water met with in the downward progress, all had to be calculated in an estimate of the probable cost. The coal districts were generally remarkable for beds containing large quantities of water, and, of course, when any beds of this description were pierced, the water had to be got rid of. The method used generally was that of blocking it out, and this was done in three ways. The first was by timbering; and in this process planks were put around the side of the shaft, and secured with iron fastenings—a fence which bore very well a pressure of 100 lbs. to the square inch. If, however, the water was at all soft, the iron fastenings were corroded, and the timbering became useless.

Another mode was called "tubbing," in which, instead of timbers, solid blocks of wood, 6 or 8 inches square, were used. These were constructed or fastened together without iron, and they formed a strong compact mass, which would bear a pressure of 300 lbs. to the square inch. Both these plans, however, and particularly the former, did not entirely block out the water, some of it continually oozing through, and falling to the bottom of the pit. The method now used in England was called "metal tubbing," and this consisted of cast-iron segments fitted to the shaft, about 4 feet by 2 in., and from ½ in. to ¾ inch in thickness. These formed a sound cast-iron tube, which completely shut out the water. This was perfectly successful, except, perhaps, in one case, and that was when the water was much charged with salt. In that case the iron was gradually changed into plumbago, one of the most curious transformations known in the kingdom of chemistry. It was, however, a fact well established. The difficulties arising from the appearance of water would be best understood by the following statistics:—In sinking one shaft with which he was acquainted, four springs were tapped in 144 yards, which yielded water to the extent of 1600 gallons per hour, all of which was tubbed out. At 78 yards the excavators came to a spring, which yielded 200 gallons per hour; that was successfully tubbed out, but 27 yards lower another, which gave out an equal quantity, and a great deal of gas was met with. Having disposed of that, they next came, at only 2 yards further down, upon a bed which gave out 1000 gallons per hour. This, of course, was more difficult to deal with; it was, however, successfully tubbed out; but at 8 yds. lower down there was another spring which gave out 200 gallons. Having mastered that, there was no more water found in the remainder of the shaft. This was pretty well, but a pit in Durham furnished far more remarkable conditions: in sinking a shaft there in 1842, at 146 yards down, the water was so considerable as to require engine-power to the amount of 1310 horses to remove it, a bed having been pierced, which gave out 10,000 gallons per minute. Notwithstanding this overwhelming quantity, it was most completely shut off by metal tubbing, and the shaft, which was 14 ft. in diameter, was carried down to a depth of 248 fms., and at that immense depth the bottom was perfectly dry—a most remarkable and triumphant instance of the efficacy of metal tubbing. As might be well supposed, the cost in such an instance as this was enormously great; but, generally speaking, the cost varied very much in every instance. In a few cases a hundred pounds might settle the matter, whilst in others several thousands might be expended; and he himself knew of one instance where 100,000*l.* had been laid out in the construction of one shaft, before the coal was reached.

Having reached the coal, the next operation was that of removing it, and for this purpose three distinct methods, dependent on certain conditions of the coal itself, were employed. It was obvious that the greater the depth the greater must be the pressure upon the coal; and when the pressure was great it was necessary to work with more care than when the pressure was not so heavy. The depth then was an important matter. The dip of the coal was another thing which affected the working considerably, there being more difficulty in working at a high inclination than when the bed was tolerably level. The faulted condition was another great thing; but the thickness of the seam was the most important of all. The thickness of seams varied from 12 inches to 30 or 40 feet. Within this range there must, of course, be very different methods of working.

In the Newcastle district the workable seams average from 4 ft. to 7 ft., and it was of the mode used here upon which he proposed to treat. Another very important element in the consideration of such works was the extent of the property; for supposing 500 acres to be the area worked over, it might be worth while to incur larger expenses than when the property was only 20 acres. The nature of the coal itself—whether it was soft and tender or hard, whether it was more or less bituminous, whether it gave out large quantities of gas, or, as in the case of anthracitic coals, scarcely any at all—greatly affected the working. If it were tender it would require a great deal of support, and if anything like the quantity were removed which might be removed if it were hard, the pressure of the overlying strata or beds, would destroy that which was left behind by crushing it to powder. The nature of the overlying beds and of the floor was also most important, and all these various facts had to be well considered in laying out a mine, and in settling the principles on which it must be worked. There was also one other most important thing, and that was the custom of the country; no plan, however admirable, could succeed, unless it paid great deference to the prejudices of the people. There were three particular modes of working—the first was the pillar and stall; the second, the long wall method; and the third, the thick coal method. The first was adopted in the Newcastle coal-field exclusively; its object was to remove as large a portion of the coal as possible, leaving only a sufficient quantity to support the roof. At small depths one-half might be obtained, but at great depths one-third or one-fourth, and sometimes even less than that. Having obtained as much as possible in this way, timber props were substituted for the pillars of coal, and the latter having been removed, the props were withdrawn and the roof suffered to fall in. Of course these were operations requiring the greatest possible care, as well as practical knowledge of geology. On reaching the bottom of the pit it was usual to leave a considerable portion, in order that the shaft might rest on as solid a foundation as possible; two galleries were generally run out to a sufficient distance, and then the coal was regularly got in the manner he had described; the galleries were generally 4 or 5 yds. wide, and those which cut across 2 yds., leaving at every intersection a large square pillar. The learned lecturer here referred to a large number of drawings, which represented accurately a number of actual workings in the Newcastle coal-field, and then proceeded to speak of ventilation. The temperature of the pit being different from that of the air at the surface, a current naturally set down the shaft, and in mines which had two shafts the air was made to set down one and up the other. In the old mines ventilation was left pretty much to itself, and the air would often traverse 60 or 70 miles before it came to the upcast shaft. In modern mining, it had been found better to divide the mine into distinct areas, and by this means a more constant supply of air was kept up. A most important quality of air had been developed in this way; it was found that by dividing the air the quantity brought into the mine might be doubled or trebled; and the current having been once established, it was kept continually in motion by proper stoppings, at every point at which it might otherwise have lost its direct course—this was called coursing or splitting the air. The quality of the atmosphere was a most important consideration; the coal gave out certain gases, which, when united with the atmosphere, made a most explosive mixture. When the atmosphere contained 1-15th of carburetted hydrogen, it began to be explosive; and at one-ninth, it was most highly and dangerously explosive—the products of the explosion being then nothing more than carbonic acid gas and water. This gas was one of the most poisonous; and it was important, therefore, that the mine should be so constructed as to prevent the accumulation of such dangerous mixtures. It was, however, next to impossible in the Newcastle mines to prevent the atmosphere from becoming explosive, because some of the seams give out spontaneously almost incredible quantities of gas. Some light was absolutely indispensable to the miner; and it had long been a desideratum amongst scientific men to contrive a safe, and, at the same time, a sufficient light. Miners often used a small naked candle, which was the most dangerous light that could be well imagined. Many plans had been suggested—by some an inclosed electric light was favoured; others thought the sunlight might be reflected; but to all these schemes there was an insurmountable obstacle—viz.: the thickness of the air. In the mine there was always a great deal of coal-dust; and the air was generally so thick, that no light whatever could reach any great distance. Sir H. Davy, about 30 years ago, constructed a lamp which, while it was perfectly safe, gave a sufficient light. It was founded on the principle that explosive atmospheres would not pass through narrow tubes; and wire gauze it was discovered answered the purpose of the tube. With such a lamp, he should have no hesitation in going into the most dangerous atmospheres; and, indeed, he had frequently done so. [The lecturer here referred to the actual lamps and models on the table which were used by Sir H. Davy in working out this great discovery—all of which are carefully preserved in the museum of the institution.]

Prof. Ansted then referred to the possibility of lessening the frequency of explosions by Legislative interference—of which he did not entertain any sanguine hopes. If any good or sufficient plan were laid down, it would only be adopted in those mines in which already everything which art could devise, or humanity could suggest, had been tried. Whatever plan, then, was adopted, it would be unsuccessful, until it was stringently enforced in the worst cases; but he did not believe it would be possible entirely to prevent explosions, and the lamentable loss of life which unfortunately always resulted from them.

GEOLOGICAL SOCIETY.

May 22.—Sir Charles Lyell (President) in the chair.

The Hon. G. S. Gough was elected a fellow. The following communications were read:—

On a Gap in the Greywacke Formation of the Eastern Lammermuirs, filled with Old Red Sandstone Conglomerate; by W. Stevenson, Esq. The author described an extensive band of conglomerate of the old red sandstone age, running north and south across the Lammermuir Chain, from Doon Hill, about two miles from Dunbar, to the Narden's Hill, about two miles west from Dunse. The conglomerate connects the old red sandstone districts of Haddington and Berwickshire, and occupies a trough in the greywacke, which is evidently the result of an ancient dislocation of great extent. All the materials of which the conglomerate consists appear to have been derived from the adjoining greywacke and porphyritic rocks. After noticing the claystone dykes and various dislocations that traverse the conglomerate, the author concluded by referring to a precisely similar gap in the greywacke of Roxburghshire, filled up by strata of the old red sandstone and lower carboniferous formations.

On the Stratified Formations of the Venetian Alps; by Count A. de Zigno. The district described in this paper is bounded on the east by the Tagliamente, on the north by Carinthia and the Tyrol, on the west by the Adige, and on the south by the plain which extends to the Po. The author stated that he had succeeded in recognising and establishing certain geological horizons, in rectifying some of the earlier observations made on the geology of this part of the Alps, and in satisfying himself of the correctness of others more recently made. The stratified formations of the district were then described and referred by the author respectively to the trias, lias (?), lower, middle, and upper oolites, neacomian, gault, upper greensand, chalk, and the eocene, miocene, and pliocene tertiaries.

On the Limestone of Nash, near Presteign, South Wales; by J. E. Davis, Esq. In this paper the author proposed to determine the age of a limestone, locally known as "Nash Scar," lying upon the two sides of an upheaved anticlinal ridge of Caradoc sandstone, that separates the valleys of Knill and Presteign. The limestone was described as being in absolute contact with the sandstone on one side of the ridge, and on the other separated from it by a few feet of shale—a similar shale overlying it on each side of the ridge. The relation of the Nash Limestone to the lower Ludlow strata is somewhat obscured by the gravel deposits in the above-named valleys; but, both from its mineral structure, and especially its organic remains, the author considered it to be quite distinct from the Woolhope, and identical with the Wenlock limestone.

The following papers to be read on June 5:—1. On Fossil Lepididæ; by C. Darwin, Esq.—2. On the Diluvium of the neighbourhood of Bath; by C. H. Weston, Esq.—3. On the Tertiary Strata of Blackheath; by the Rev. H. M. De la Condamine.

The Ashburton and South Devon Geological and Mineralogical Society.—The inaugural meeting of this society was held at the society's rooms, West-street, on Thursday last. E. R. P. Bastard, Esq., of Kitley, presided; and the address was delivered by G. S. Curtis, Esq., of Teignmouth. It was an able and scientific disquisition on the great advantage to be derived from the study of geology, mineralogy, agricultural chemistry, &c., and was warmly applauded. There were nearly 200 ladies and gentlemen present from the town and vicinity. The meeting was also addressed by the chairman, the Rev. W. Marsh, &c. Lectures will be occasionally given. Already several fine specimens of minerals, &c., have been presented. We wish the society every success; and undoubtedly it must, if supported, prove highly interesting to every lover of the sciences.—*West of England Conservative.*

Sims's New Improved Cooking Stove.—The valuable and important improvements in the domestic cooking stove that has been invented by Mr. Josiah Sims, engineer, of Tavistock, Devon, has been fairly tried by many parties in Tavistock and other places, and has been proved to be quite successful. Mr. Sims has received from them very satisfactory testimonials, speaking in the highest terms of the great improvement that he has made in the domestic cooking stove. The advantages and improvements that his invention possesses over the stoves that are usually made is, an improved formation of the oven, in such manner that it is not only more quickly and readily heated and kept ready for use, but a considerable saving of fuel is effected.

New Principle of Ventilating Mills.—The *Northern Whig* describes a new system of ventilation introduced by Messrs. Rowan and Sons into a flax mill just erected by them at Belfast. The application of the system is partly confined to the rows of hollow columns which support the floors of the building. A sufficient opening is made near the upper part of the column to admit a ventilator, which is placed in a position to receive a portion of the fresh air constantly supplied by the outer door of the building. The columns are placed directly one above the other (as is the case in other mills), so as to form a complete funnel, carrying off all foul evaporations at the top of the mill, while the columns are so constructed that, on the upper extremity of each, a trumpet-shaped conveyancer attached completes the apparatus, and will, when carried out, perform the most perfect ventilation, beyond the possibility of failure. In addition to the above, are ventilators placed at the top of each window, inside, acting independently of the central columns, on a new principle, which conducts the evaporation at once from the room in which it is placed, by a funnel being built in the wall, whence it is discharged beneath the window-sill of the next story. In this ventilator, which extends across the whole breadth of window, is a moveable valve, which is worked like the throttle-valve of a steam-engine, and can be set at pleasure by a cord being attached to it.

Novel Experiment in Aerostation.—A new aspirant for aerial honours has appeared in the person of Mr. Bell, a gentleman connected with the medical profession, and who has decidedly, and with the most complete success, achieved a new discovery in the science of aerostation—that of controuling, directing, or steering a balloon. Yesterday week the appearance of a balloon of a singular form traversing the metropolis, occasioned some speculation as to whether the frail car, from its oscillating gyrations, contained an animate or inanimate aeronaut. The occupant, it appeared, was Mr. Bell, who manœuvred his bark through the realms of air with a dexterity that puts all his contemporaries in the shade. Without endeavouring minutely to describe this new balloon, it may be briefly stated that it is of an elliptic shape, somewhat resembling in form the Spanish melon or vegetable marrow, manufactured of the finest silk, with netting of cordage, and with a spring valve constructed on an entirely new principle. It was estimated that the balloon would contain about 15,000 cubic feet of gas, its dimensions being 50 feet in length and 22 ft. in diameter.

Illegality of a Company Completing Part of their Railway only.—In the Rolls' Court, on Monday, Lord Langdale delivered judgment in the cause Graham *v.* the Birkenhead, Lancashire, and Cheshire Railway Company. He said, it was clearly established in this court, that when a railway company had been constituted by Act of Parliament, there was a condition imposed upon them that they should do that which the Act contemplated—particularly in this respect, that if they undertook to complete an entire line or series of lines, they were bound to complete the whole line or series of lines, and were not at liberty to abandon any part of it without parliamentary authority. It was on this condition that Parliament granted to them extraordinary and despotic powers over the property of private individuals. The public benefit to be derived from the completion of the entire works was regarded as a compensation for the interference with private rights. It was unfortunate that after companies had obtained their powers, they frequently got the notion that these powers were given for the benefit of the shareholders only, and that they had a right to use them in their characters of partners without regard to the public benefit. Parties might frequently have been innocently led into error on this point, in consequence of not being sufficiently informed of the law. But ignorance of the law was no excuse for the violation of it, and the court was bound to act upon it. In this case the powers were given for the purpose of making a line from Birkenhead to a place near Stockport, with branches, &c., on the faith that the whole undertaking would be completed. It was admitted that at this time the company were not intending or able to make the whole line, and thus to perform the condition on which their powers were granted. It was urged that the part proposed to be completed was part of the whole line originally authorised. The same argument was urged in the case of Cohen *v.* Wilkinson, but it did not prevail. It was said that the company had, when there was a possibility of making the entire line, entered into a contract with Mr. Brassey, as contractor for the portion of the line proposed to be completed, and that they were under obligations to him in consequence, but that was no reason why they should depart from the obligation imposed on them by Parliament. It was also said, that if the court interfered, it would inflict great loss on the company. He very much regretted that. He had on a former occasion expressed his opinion, that a case might possibly arise, in which, having regard to the expenditure already incurred, and the advantages to be derived by the public, the Court might refuse to interfere. He did not know whether he was correct in that view, and he never said anything which implied that the court would allow the continuance of works contrary to an Act of Parliament. He should grant the injunction asked for, as to the continuance of the works, but he would not restrain the company from raising money by loan to pay off former loans; and they must be restrained from enforcing calls by forfeiture or otherwise, except for discharging debts or liabilities incurred before the filing of the bill, or paying, without prejudice to the question in the cause, any sums which became due to Mr. Brassey before the bill was filed.

The Belfast Junction Railway—Viaduct over the Boyne.—We believe we may state with confidence that this stupendous undertaking will be commenced ere long. The Chancellor of the Exchequer has granted the sum of 100,000*l.* for the purpose of completing the junction line. We have this on good authority.—*Newry Examiner.*

Extraordinary Cure of Rheumatic Fever by Holloway's Pills in Van Diemen's Land.—Margaret M'Connigan, 19 years of age, residing at New Town, had been suffering from a violent rheumatic fever for upwards of two months, which had entirely deprived her of the use of her limbs. During this period she was under the care of three of the most eminent medical men in Hobart Town, and by them her case was considered hopeless. A friend prevailed upon her parents to try Holloway's celebrated pills, which they consented to do, and in an incredible short space of time a perfect cure was effected. This cure is copied from the *Hobart Town Courier*.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY.....General Mining Company for Ireland—offices, at Eleven.
Basingstoke Canal Navigation Co.—Gray's Inn Coffee-house, at Two.
Llanelly Railway and Dock Company—King's Head Tavern, Poultry, One.
Royal College of Chemistry—at the College, at Two.
Grand Junction Canal Company—offices, at Eleven.
Grand Union Canal Company—offices, at Eleven.
Accidental Death Insurance Company—offices, at One.
TUESDAY.....Mitre General Life Assurance Company—offices, at Twelve.
Bank of British North America—offices, at Twelve for One.
South Wales Railway—Paddington Station, at Two.
Norwich Union Reversionary Interest Company—offices, at One.
WEDNESDAY ..Tavy Consols Mining Co.—Prince George Hotel, Stonehouse, at Twelve.
Regent's Canal Company—offices, at One.
Gravesend and Rochester Railway—offices, at One.
Guardian Assurance Company—offices, at Twelve.
West Cornwall Railway—King's Arms, Westminster, at Twelve.
THURSDAY ....Derwent Mines Company—offices, at One.
Hammersmith Bridge Company—Crown and Anchor, Strand, at One.
Metropolitan Stone Company—offices, at Two.
Equitable Assurance Company—offices, at Eleven.
FRIDAY .....St. John del Rey Mining Company—offices, at Two.
Anglo-Mexican Mint Company—offices, at One.
Surrey Consumers' Gas-Light and Coke Company—offices, at One.
Times Life Assurance and Guarantee Company—offices, at One.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY.

The nineteenth half-yearly general meeting of proprietors was held at the offices in Leadenhall-street, on Thursday, the 30th of May, for the purpose of receiving the directors' report, and the declaration of a dividend. It was also announced that the meeting, after the general business had been disposed of would be made special, for the purpose of considering a resolution, authorising the directors to increase the capital of the company, if required.

JAMES MATHESON, Esq., M.P., chairman of the court of directors, presided.

After the minutes of the last half-yearly meeting had been read,

The CHAIRMAN said, the proprietors would observe with regret that their respected deputy-chairman, Alderman Sir John Pirie, Bart., was absent from the meeting. He lamented to say that his honourable friend was prevented from attending by the state of his health. He was now at the sea side, and he most sincerely trusted that his strength would speedily improve, so that within a very short period he might be able to resume his duties at the board, and renew his valuable services to the company—services of infinite benefit to the undertaking, from his long experience and great zeal. (Hear, hear.) He would only add, that the secretary had received the following letter from his honourable friend:—

Swansea, May 27.—DEAR SIR: I regret to say that the state of my health is still such that I fear I shall not be able to attend the general meeting on the 30th inst., and I regret this the more, as I shall thus be prevented from expressing personally to the proprietors my most grateful thanks for the highly gratifying, and, I may add, the munificent and truly kind manner in which they were pleased, at the last general meeting, to notice my humble endeavours to further the interests of the company. I trust they will, with their usual kindness, accept this apology for my absence; and although at the present time I am unable to attend the court, yet you may assure them, if it should please God in some measure again to restore me to health, I hope still to be useful, in some degree, in assisting to promote the welfare and prosperity of the Peninsula and Oriental Company. I am, dear sir, yours faithfully,

C. W. Howell, Esq. JOHN PIRIE.

This letter was received with much applause.

Mr. HOWELL (the secretary) then read the directors' half-yearly report, which is as follows:—

As has been intimated in former reports, the Deed of Settlement limits the production of accounts to the annual general meetings of proprietors, usually held in the month of December. The directors, however, are able to inform you that the financial state of the company continues to be satisfactory, and is such as to warrant their recommending a declaration of the usual half-yearly dividend of 4 per cent. for the six months ending the 31st of March last.

RESERVE INSURANCE FUND.—The directors are also enabled to report that no casualty involving loss from sea risk having happened to your fleet since their last report, this fund remains intact.

EXTENSION OF STEAM COMMUNICATION TO THE NORTHERN PORTS OF CHINA.—The directors having, for some time past, been urged by merchants and others, connected with the trade to Shanghae and Amoy, to place a steam-vessel on the line between Hong Kong and these ports, the steam-ship, *Lady Mary Wood*, which had become a supernumerary vessel on the India and China line, has been appointed to ply on that station; an arrangement which, while it affords great facility to trade in that quarter, promises to be advantageous to your interests.

TENDER TO GOVERNMENT FOR THE ESTABLISHMENT OF STEAM COMMUNICATION WITH AUSTRALIA, &c.—In their last annual report, the directors intimated to you that her Majesty's Government had issued an advertisement, inviting tenders for establishing a steam-packet communication with Australia. These tenders were required to be lodged with the Lords Comissioners of the Admiralty on the 22d January last. As the failure of former proposals for effecting this object was understood to have arisen from the large sum which would be required to establish and maintain such a communication in the mode then prescribed by the Government—and the conditions under which these last required tenders were proposed to be made, being such as to leave parties tendering at liberty to submit their own plans—it became an object of much importance to consider whether the position of this company might not admit of such arrangements as would reduce the cost of the proposed communication, and thus remove the financial difficulty. With this view a plan was prepared, having for its basis the combination of the proposed Australian communication with other lines of communication in the east already established, and proposed to be established, by this company, the effect of which would be as follows:—

1. The formation of an inter-colonial system of steam communication in Australia, and the adaptation of the postal transit between the Australian colonies and the mother country, India, China, &c., to the shortest time and distance admissable by their respective geographical positions.

2. Communications connecting these colonies, for commercial and passenger, as well as for postal intercourse with China, the Straits' settlements, Eastern and Western India, and Ceylon.

3. A continuous means of steam conveyance for merchandise and passengers, as well as for letters, between Australia and the mother country.

The estimated advantages to the company of these combined arrangements, by bringing additional traffic into their other lines, would be such as to enable them greatly to reduce the cost to the Exchequer of the postal communications. A proposal based upon this plan was accordingly presented, on behalf of the company, to the Government, on the 22d of January last. The directors have reason to believe that the important public advantages of the plan and proposal are duly appreciated by her Majesty's Government, but as the carrying of them into effect involves some arrangements between the Government and the Honourable East India Company, the delay occasioned by the negociation of these arrangements has, the directors understand, prevented the Government from communicating to them, as yet, any final decision on the tender made by them in January last. Looking, however, to the important and obvious advantages to the public interests which that tender presents, the directors feel themselves warranted in assuming that the practical adoption of its proposed arrangements cannot be much longer deferred.

ADDITION OF TWO STEAMERS TO THE COMPANY'S FLEET.—With the view of being in some degree prepared for any extension of the company's operations, and in order to maintain its floating establishment in complete efficiency, the directors entered into a contract some months since, with Messrs. Tod and M'Gregor, of Glasgow, for the construction of two iron steam-ships, of 1200 tons, and 500 horse-power each. They are in an advanced state, and will be ready for service about the latter part of this year.

TRANSIT THROUGH EGYPT.—On this interesting subject the directors are happy to be able to report that his Highness the Pasha continues his exertions for the improvement of the transit arrangements, as well as to manifest an entire confidence in the company, and a desire to promote its interests.

EXTENSION OF THE COMPANY'S CAPITAL.—In their last annual report the directors alluded to the probability of an increase of capital being required, in the event of the extension of the company's operations. And, although they are not as yet in a position to announce to you with certainty such an extension, they have, nevertheless, deemed it advisable to call upon you for the necessary authority to enable them to issue shares for calling up, in case of need, the remaining half million of capital (or as much of it as may be required), authorised to be raised by the Royal Charter of Incorporation, and the official sanction of the Lords Commissioners of her Majesty's Treasury. For that purpose a special meeting, according to the notice which has been given, will be held this day, in order to submit to you a resolution, in conformity with the stipulations of the Charter and Deed of Settlement. In issuing these new shares the directors propose, as stated in their last report, to offer them at par, in the first instance, to the holders of shares in the present capital of the company, in the proportion of one new share for every two of the present shares, on payment of a deposit, as a first instalment, of 5*l.* per share; such further sum as may be required to be called up by instalments of similar amounts, and after due notice being given. A detailed statement of the conditions under which the new shares will be issued will, however, be circulated among the proprietors, for their information when the proper time may arrive.

DIVIDEND.—The directors now recommend that a dividend of 4 per cent., clear of income tax, for the half-year ending the 31st of March last, be declared, and be payable on and after the 21st proximo.

Major-General MACLEOD moved that the report be adopted and circulated among the proprietors.

Sir BURTON MACNAMARA seconded the motion, and added that he had felt it his duty to inquire from his brother officers commanding ships in the Indian seas and in the Mediterranean their opinion concerning the vessels belonging to the company. He was gratified to have it in his power to state that there was but one opinion among them upon the subject, and it was, that no steam fleet in the world was in better order, or in a condition of greater efficiency, than that of the Peninsular and Oriental Steam Navigation Company. (Hear, hear.)—The report was adopted unanimously.

Colonel UNDERWOOD moved that a dividend be declared of 4 per cent., clear of income-tax, for the half-year ending the 31st March last, and that the same be payable on and after the 21st June. The gallant colonel stated that he had arrived from India by the last steamer, and he had much pleasure in availing himself of this opportunity to express his cordial satisfaction with the arrangements of the service, and the efficiency of the ships belonging to the company, so far as they had come under his observation. He believed they never were in better order, and he was happy to add that they had given entire satisfaction to every person who had been concerned with them.

Mr CASTLE SMITH seconded the motion, and it was unanimously carried.

The meeting was then made special, for the purpose of considering the propriety of raising additional capital, when Mr. WILLCOX, M.P., said, that in conformity with the Deed of Settlement, and with the recommendation contained in the directors' report, he had the honour to move—"That the capital of this corporation be increased to the sum of 1,500,000*l.*—1,000,000*l.* thereof having been already paid up—by the creation of 10,000 new shares, of 50*l.* each, to be issued by the directors at such times as they may consider most advantageous for the interests of the company."

Mr. ANDERSON, M.P., seconded the motion.

Mr. OWDEN asked whether the contemplated increase of capital was intended to be made absolutely, or only in the event of a further contract being obtained by the company?

Mr. WILLCOX, in reply, said that, as stated in the report, the increase would only be made in the event of a large extension of the company's operations. Two new ships were now building; and they would be paid for from the depreciation fund, which, at this moment, was 191,000*l.* in Exchequer bills, lying in the banker's hands. (Hear, hear.)

The resolution was unanimously carried.

Mr. MORRIS, after expressing his satisfaction with the condition and prospects of the company, moved a vote of thanks to Mr. Matheson, for his conduct in the chair.

Mr. PENNY, in seconding the motion, warmly applauded the proceedings of the directors, and suggested that the entire board should be included in the vote.

The meeting warmly responded to this suggestion, and the resolution was unanimously passed, acknowledging the services of the chairman, the court of directors, and managing directors.

Mr. MATHESON, on the part of the directors and himself, cordially thanked the proprietors for the honour conferred upon them by this vote, and assured them it would always be the pride of the board to merit their approbation.—The proceedings then terminated.

STEAM FLEET OF THE PENINSULAR AND ORIENTAL NAVIGATION COMPANY.

Ships.		*Tons.*	*Horse-power.*
	SUEZ AND CALCUTTA SERVICE.		
Hindostan		1800	520
Bentinck		1800	520
Precursor		1600	500
Haddington		1500	500
Oriental		1600	500
	BOMBAY AND CHINA SERVICE.		
Pekin		1180	430
Achilles		1000	420
Malta		1225	450
Braganza		800	280
	HONG-KONG AND SHANGHAE.		
Lady Mary Wood		650	260
	CANTON LOCAL SERVICE.		
Canton		400	150
	SOUTHAMPTON AND ALEXANDRIA SERVICE.		
Indus		1400	450
Ripon		1500	450
Pottinger		1400	450
	CONSTANTINOPLE AND BLACK SEA SERVICE.		
Sultan		1100	500
Euxine		1100	400
Tagus		900	280
Erin		850	280
	PENINSULAR AND ITALIAN SERVICE.		
Montrose		650	240
Iberia		600	200
Pacha		600	210
Jupiter		600	260
Madrid		500	160
Building at Glasgow		1200	500
"	"	1200	500
Total		27155	9310

IONIAN BANK.

The annual meeting of proprietors took place at the bank, Great Winchester-street, City, on Thursday, the 30th May,

OLIVER FARRER, Esq., in the chair.

The SECRETARY (Mr. Kettlewell) read the following report and accounts:—

The directors of the Ionian Bank, in submitting to the proprietors their annual report, have the gratification of being able, at the same time, to renew their assurance that the state and prospects of the establishment continue to be satisfactory. Notwithstanding the occurrence, during the year 1849, of events which might have exercised an unfavourable influence, the operations of the bank have been conducted with profit and safety, its credit has been, and is, unshaken, and its condition generally is sound and healthy. The business, indeed, may now be considered to have attained to a steady and ascertained position; and although, with a capital necessarily limited, large profits are not to be expected, and could not be realized compatibly with security, yet the experience of the past warrants a confidence that the actual results will, at least, be permanent.

So far as the internal administration of the bank is concerned, the enlarged experience, and, consequently, greater aptitude of those who conduct its operations are, of course, an element in its favour; and as to the external circumstances by which its prosperity might be affected, the directors discern nothing either in the political or social condition of the islands which affords ground for apprehension. It is true that a factious spirit now and then manifests itself among a section of the community, but there is reason to believe that the great bulk of the people have no sympathy with these disturbers, and that, as regards the bank, they are too well convinced of the substantial benefits accruing from the establishment, not to afford it a frank and hearty support. The directors have already had occasion to acknowledge the manifestation of this spirit among all classes—proprietors, cultivators, and merchants; and they rely with confidence on their continued good-will and co-operation. Whilst adverting to this subject, it may not be out of place, though somewhat in anticipation of the period to which the events themselves properly belong, to state that the recent occurrences in Greece have not affected the several agencies at Patras and Athens, where a good and profitable business continues to be carried on.

The result of last year's operations will be found in the summary at the foot. The directors have been able, out of the profits of the year, after deduction of all bad debts, and payment of the usual dividend of 6 per cent., to appropriate a sum to the liquidation of preliminary expenses, which item is now reduced to an insignificant amount, and will shortly disappear altogether from the accounts; and to carry to the reserve a net surplus of upwards of 1000*l.* They have also the satisfaction of perceiving, from the returns of the current year, that there is no falling off in the business of the bank; and as some contingencies, for which it was necessary in the past year to make provision at a sacrifice of profit, are not likely to recur, there is ground for anticipating a further improvement.

The court continue to exercise the same vigilance which, with the aid of the local administrators, has hitherto secured the bank against the risks to which such establishments are otherwise obnoxious; and they venture to reiterate their assurance that their vigilance will not be relaxed. They announce with regret the retirement of their gallant and distinguished colleague, Sir Frederick Hankey, whose place has been supplied by Mr. John Ranking.

The accounts for the year 1849 exhibit the following result:—

Balance at the credit of profit and loss on the 1st January, 1849	£12,472	18 3
To which is to be added the net profit for the year ending 31st Dec., 1849, after deducting charges, bad debts, and a proportion of preliminary expenses	10,062	8 8
Making together	£22,535	6 11
From which is to be deducted the amount of two half-yearly dividends, at the rate of 6 per cent. per annum, paid in 1849	8,992	10 0
Leaving at the credit of profit and loss on the 1st January, 1850	£13,542	16 11

The CHAIRMAN, in moving the adoption of the report, alluded to the various untoward circumstances which had characterised the past year; but, at the same time, he thought it would be a source of congratulation to the proprietors to receive a report so favourable as the present. The state of things in the Ionian Islands, he was happy to say, was now much improved, and he had no doubt the bank would participate in the advantages of a restoration to tranquility. The chairman concluded, by moving the adoption of the report, and that it be printed and circulated amongst the proprietors.

Mr. MARSHALL seconded the motion, which was agreed to unanimously.

The two retiring directors, Admiral Sir A. P. Green, K.H.O., and John Ranking, Esq., were re-elected unanimously.

Mr. M'DOUGALL moved a vote of thanks to the chairman and directors, which, being seconded by Mr. GOLDNEY, was passed unanimously.

A unanimous vote of thanks was also passed to Mr. Kettlewell, the secretary, for his long and zealous services on behalf of the company.—The meeting then separated.

ABERDEEN RAILWAY.—The committee on this company's bill have reported that the additional capital (200,000*l.*) proposed to be raised is merely to enable the company to carry into execution their existing Acts. The steepest gradient is 1 in 100, and smallest radius of a curve 3 furlongs. The length of railway to be altered is 57 chains. The cost of the proposed alteration of the station and levels is 17,000*l.*, being less than the estimated cost of the present authorised line within the limits specified. Mr. J. Locke, M.P., Mr. J. E. Errington, and Mr. Robertson, were the engineers examined in support of the bill; and Mr. W. Cubitt, M.P., Mr. J. Abernethy, and Mr. B. Blyth, were the engineers examined in opposition to it. The quantity of land required for the proposed alterations of station and levels is 51 acres. The committee had amended the preamble by limiting the railway to the south side of an intended road near Guild-street, leading to the quays, instead of to the south side of Guild-street, as originally proposed by the bill.

GREAT NORTHERN RAILWAY.—This company have lately had works constructed for full 30 per cent. lower than the engineer's contract prices. In the London goods and temporary passengers' station, for instance, the contracts have been let, and the works are in course of construction by responsible contractors, for prices ranging from 20 to 30 per cent. lower than the engineer's scheduled prices; and yet the engineer made his estimate of the price at which the work should be done, when the market price of materials was near its lowest.

Since the opening of the Leeds and Thirsk Railway, the Silkstone chamber coal, so much in use in the West Riding of Yorkshire, which emits little or no smoke, has found its way into many parts of the North Riding.—*Sheffield Times.*

HISTORY AND MANUFACTURE OF GUNPOWDER.—No. VII.

BY JOHN JOSEPH LAKE, OF THE ORDNANCE DEPARTMENT.

After powder has been exposed many years in service it gets injured more or less by damp, notwithstanding the greatest care, and the motion to which it is unavoidably subjected causes a considerable accumulation of dust. Powder, in this state, can be restored by drying and dusting, unless the moisture has made the grain too soft. The drying and dusting processes are conducted by exposing it, as described when treating of the manufacture, in the steam stoves, and afterwards passing it through the reels to remove the dust. Powder thus restored remains good for many years, if properly taken care of. I have seen some as fit for service as ever after a lapse of 20 years, and to all appearance likely to remain so for a much longer period. Powder fit for restoving will be found to have absorbed only about $\frac{3}{4}$ lb. of moisture in the 100 lbs.; much beyond this, the grain is too soft. Powder in this state gives a higher proof by mortar and eprouvette than clean powder, on account of the ignition being more complete. This is owing to the dust assisting in spreading the fire more rapidly through the mass. Restored powder is not expected to prove so high as new; but it very frequently gives a greater range, even when freed from dust.

The regeneration of powder is an operation by which it is restored after becoming so much deteriorated as to render restoving insufficient for the purpose. Powder is regenerated by passing it through the earlier stages of the manufacturing process, by which it is brought back to a proper state in every respect. Besides the common gunpowder made with charcoal, saltpetre and sulphur, many other kinds have at different times been manufactured. According to the report of a commission appointed to inquire into the properties and powers of pyroxyline in the spring of 1847, which met at the Artillery Establishment at Vincennes, in France, under the presidency of the Duke de Montpensier, M. Combes prepared a gunpowder, which corresponded completely in its effects with common gunpowder, by mixing 18 parts by weight of nitrate of soda, and 22 parts of nitrate of potash, with 100 parts of mining powder. This is a very simple process for improving inferior powder by adding the principle pointed out in a previous paper as deficient in the French and other mining powders—namely, saltpetre, or a nitrate, to afford a proper supply of nitrogen, and render the combustion of the carbon complete—for 62 parts of saltpetre do not yield enough nitrogen during the combustion of the powder to combine with 18 parts of charcoal; all powders with similar small proportions of this salt are, therefore, necessarily weak.

The circumstance of nitrate of potash being only useful to supply a due proportion of nitrogen for the charcoal has suggested that other nitrates would answer the purpose, and nitrate of soda has been tried. This would have effected a great economy, being a much cheaper article; but it was found unsuitable, on account of its attraction for moisture.

The new white gunpowder, lately invented at Constantinople, and said to be composed of one part prussiate of potash, one part sugar, and two parts chlorate of potash, seems to be attracting some attention. Its peculiarities are said to be increased power, quicker ignition, explosion by percussion, and no smell. I am always very backward in discouraging novelties, for it is impossible for any one to tell whence good may arise; but explosion by percussion seems to be a dangerous property in gunpowder, as all who have to deal with detonating or percussion powders know too well. Powders of this kind have long since been manufactured, but are not found suitable for war as a substitute for that at present in use. Sir William Congreve made some of similar ingredients and proportions as common powder by a peculiar kind of manipulation, which exploded by percussion; but it was found to be a dangerous composition, and inapplicable to the purposes of war. A detonating powder is prepared by Government for particular uses, which explodes so readily by the least friction or percussion, that very small quantities of the ingredients are mixed at a time, with a little wooden spatula at arm's length, but with all this care it frequently explodes. A percussion gunpowder is ill adapted to pass through the rough treatment it would meet with in a campaign, especially in a mountainous country like the Peninsula, on account of the delicacy with which it must be handled to prevent accidents. As regards the increased strength and quicker ignition of this new kind of powder, these qualities may be useful for some purposes; but for those of war the powder at present in use, if faulty at all, is already too strong, and inflames too quickly. Hence has arisen the necessity for preparing the large-grained kind for projecting great weights, that the production of the gases may be continued after the inertia of the shot has been overcome. By employing powder that ignites too rapidly, the explosion is so instantaneous, that the force of the powder is spent at once, before the shot has left the muzzle of the gun; the strain upon the metal in consequence, and the danger of bursting, is much increased.

The effects of a too rapid evolution of the gases is displayed in the case of fulminating silver. Two or three grains will tear the barrel of a musket into pieces, and flatten a leaden bullet as with a hammer; whilst the distance the latter will be projected is very short. If an iron bullet be put into the piece, instead of a leaden one, it will be broken to pieces. This clearly shows that the force of the gases, generated by the explosion of the silver, is chiefly spent in overcoming the inertia of the ball, and that very little power remains afterwards to drive it forward to the muzzle. It would rather seem that improved adaptations of gunpowder to the necessities of war are to be looked for in the opposite direction, by the production of equal effects with the slower ignition of gunpowder. For instance, by placing an inverted rocket at the bottom of a hollow tube, firing it by a small orifice at the side of the tube, and covering a shell with some substance—such as oiled leather—to confine the gases produced from the burning composition, the shell will be thrown to a considerable distance, just as the aborigines of Australia throw arrows a great distance by merely blowing them with the breath through long tubes. Objections may be made as to the possibility of employing weapons of this kind in lieu of cannon; but it would be quite practicable to use them instead of mortars; and a great advantage would be derived from their adoption, by materially reducing the weight of the artillery required by an army, and the delays frequently experienced at sieges, until the heavier kinds are brought up.

Portsmouth, May 29.

MANUFACTURE OF DIAMONDS.—In the *Mining Journal* of the 11th of May we gave some particulars of an alleged "triumph of chemical genius"—the discovery of the long-sought secret, of the fusion and crystallisation of carbon. The experiments of M. Desprezt, however, it now appears, have not been so successful as his friends wished the world to believe: another "Paris correspondent" says, "Our scientific chemists have received numerous inquiries from their brother philosophers in England as to the diamonds which, according to a correspondent of a London Journal, have at length been fabricated from charcoal. As no great discovery in practical matters, whatever may have been in religious and philosophic, have been made at the Sarbonne, from whence this new wonder has issued, the intelligence was received with hesitation; and it is now ascertained that the black diamond story is very much on a par with that of the three black crows—the learned professor whose marvellous discovery is recorded having actually produced something which some people fancy has a shining surface."

GEOLOGICAL SURVEY OF THE UNITED KINGDOM.—This service has considerably advanced during the year. Denbighshire, which includes the continuation of the Oswestry and Wrexham coal-field, is completed. The examination of Carnarvonshire is terminated, with the exception of a small portion of the mountain district—the early snows on which prevented its final survey. The Island of Anglesey, including its mines, is nearly finished. Flintshire, with its coal-field and extensive metalliferous districts, together with the western portion of Cheshire, is surveyed. The Staffordshire coal-field, with its adjoining country, is very far advanced. Dorsetshire is very nearly completed; and a large part of Hampshire has been examined. The maps of these districts, and others ready towards the close of last year—the whole including an area of about 5350 square miles—are now in course of publication, and will shortly be accompanied by numerous illustrative sections. In Ireland, the counties of Carlow and Kildare have been completed, and maps of them published. The county of Dublin has been surveyed; and the map of it is now in the hands of the engraver. The examination of the county of Wexford is nearly finished, and will shortly be ready for publication. The collection of soils and subsoils of the country surveyed, accompanied by information regarding them, has progressed as heretofore, and 194 specimens from different localities have been forwarded to the Museum of Irish Industry, Dublin, for analysis. In connection with the geological survey of the United Kingdom, the organic remains obtained during its progress have been extensively examined and classified for public inspection, and about 23,200 specimens have been thus treated during the year. Numerous donations have been received from geologists desirous of promoting the progress of the survey. Whole collections have been thus presented: such as a series of Devonion fossils, by Mr. R. A. C. Ansted; of organic remains from Folkstone, by Mr. C. Clarke; from the chalk and London clay, by Mr. Wetherell; from the Isle of Man, by the Rev. J. Cumming; and from various parts of the kingdom, by Mr. Weaver. Two decades of figures of selected fossils, with their descriptions, have been published, and others are nearly ready.

COMPANIES PROCEEDING UNDER THE WINDING-UP ACT.

THE BANWEN IRON COMPANY.—A somewhat amusing scene presented itself on Wednesday in the long corridor of the offices of the Chancery Masters. The hours of one, two, and three o'clock of that day had been appointed by Master Kindersley for the purpose of settling the list of contributories to the Banwen Iron Company, and of hearing the nature of the opposition to be offered by those whom the Master had classified under three distinct heads; and, in order to suit the convenience of the three classes, he had arranged to devote an hour to each, in the hope of disposing of them in that time, a hope which certainly could not be realised, inasmuch as there are several individual cases under the head of "class number one" alone, any one of which will involve a discussion of several hours duration; however, be that as it may, as the hour of one approached, the anxious anticipations of the hoping contributories was plainly depicted in the countenances of those who had already arrived, of whom there was a considerable number, and who paced up and down, immersed in deep thought, or gathered about in little groups, discussing the merits of their respective cases, on the strength of which they hoped to be excluded. It was now but a few minutes to one, when the body proceeded, *en masse*, to the Master's office, and there received the astounding announcement that "the Master was ill, and could not attend to day!" The contributories to the company, as well as those "gentlemen of the long robe" who would have been contributories in the shape of argument and "points of law," turned round and gazed at each other aghast, but from feelings very opposite in character. Some of them, blessed with more choleric temperament than others, exclaimed aloud, "Oh; by —— this is *too* bad," while others indulged in the significant sentences of "Oh, yes, the Derby fever," "the Master has gone to the Derby," &c. In such pithy and pointed observations the doleful "contributories," and their "legal friends," indulged, as they slowly and sorrowfully separated, while Master Kindersley really, we are assured, was lying at home on a bed of illness.

KILBRICKEN MINING COMPANY.—Peremptory orders have been granted by the Master against the defaulting contributories, the call on whom amounts to 1524*l.*, with notice of sequestration unless paid within seven days.

NORTHERN COAL MINING COMPANY.—On Monday, Master Blunt made a call of 10*l.* per share, to defray the liabilities of this concern.

NORTH LONDON JUNCTION RAILWAY.—On Saturday, Master Brougham appointed an interim manager, on the petition of Mr. J. Bagshaw, M.P. for Harwich, to institute a preliminary inquiry into the affairs of this undertaking, which, owing to the objection made by the Crown to the admission of railways into the heart of the metropolis, was abandoned, and in order to ascertain whether and upon what grounds it is necessary or expedient that the concern should be wound up.

Petitions have just been presented for the winding up and settlement of the affairs of the Larne, Belfast, and Ballymena Railway; the British and Foreign Gas Light Company, and the Union Grocery Company.

MADRID AND VALENCIA RAILWAY.—In the Vice-Chancellor's Court, on Monday, a motion was made to commit Mr. William Chadwick, the managing director of the company, he having failed to attend Master Blunt, to be examined, and to produce books, papers, and writings. The company had been formed by the issue of 53,000 shares, and 106,000*l.* had been paid in by way of deposit on calls, as to which some explanation was called for by the official manager. It was admitted that Mr. Chadwick was not at present immediately accessible, but his counsel asked for further time: they said that the allegation of the payment of the large sum which had been mentioned, and its supposed withdrawal without explanation, was not supported by any evidence. His Honour ordered Mr. Chadwick personally to appear before the Master on Saturday next (this day), to be examined pursuant to the statute; the motion in all other respects to stand over until Monday next, when it was directed to be placed on the paper.

RAILWAY TRAFFIC.—The gross traffic receipts on the railways in the United Kingdom during the first 20 weeks of the present year amounted to 4,262,902*l.*, being at the rate of 793*l.* per mile. At the corresponding period of 1849, the receipts amounted to 3,761,632*l.*, being at the rate of 827*l.* per mile; of 1848, to 3,330,902*l.*, being at the rate of 916*l.* per mile; of 1847, to 2,933,305*l.*, at the rate of 1034*l.* per mile; and at the same period of 1846 to 2,550,775*l.*, being at the rate of 1196*l.* per mile. The aggregate length of railways open over which the traffic was carried at the end of the 20 weeks in 1850, was 5470 miles; in 1849, 4644 miles; in 1848, 3756 miles; in 1847, 2990 miles; and at the end of the period mentioned in 1846, 2202 miles. The increase in the receipts during the 20 weeks in the present year, over those of the corresponding period of 1849, amounted to 501,270*l.*; the increase in the receipts during the same period in 1849 over the preceding year, 430,730*l.*; in 1848 over 1847, 397,597*l.*; and in 1847 over 1846, 382,530*l.* In the mileage, the increase at the end of the 20 weeks in 1850 over the corresponding period of 1849 was 826 miles; in 1849, 888 miles; in 1848, 766 miles; and in 1847 the increase of mileage over the end of that period in 1846, was 788 miles. The diminution in the traffic receipts per mile for the 20 weeks as compared with those of the preceding year, amounted in 1850 to 34*l.*; in 1849, to 39*l.*; in 1848, to 118*l.*; and in 1847, to 162*l.*—making the total diminution of receipts per mile during four year 403*l.*, or about 34 per cent. The result of this comparison shows that there is a considerable improvement in the traffic receipts per mile during the present year, which is to be attributed in a great degree to the comparative falling off in the mileage opened, which for the present year shows an increase over the preceding year of 18 per cent., while in 1847 it amounted to nearly 36 per cent. of the mileage open in the preceding year.

The stamp duty paid by the Railway Passengers' Assurance Company for the last quarter amounted, we perceive, to the sum of 69*l.* 2s. 3d., the amount in the previous quarter being only 43*l.* 11s. 6d. This company, which commenced business on the 2d July last, has since that period insured travellers by railway against accidents during the journey to the extent of 94,209 single journey tickets issued, and 2606 periodical tickets. The claims upon the company for which the sufferers by accident have received compensation are 10 in number.

THE LONDON AND NORTH-WESTERN STAFF.—The London and North-Western Company gives employment to more than 10,000 servants in different capacities, of whom 900 are policemen. The number of persons traversing this line weekly exceeds 140,000, and supposing each person to take three packages, parcels, or items of personal luggage, the number of articles so taken would be nearly half a million weekly. The company is liable for the proper delivery of this luggage, as well as for the safe transit of the passengers, and yet, with these six or seven millions of packages, &c., to take charge of, the average number the company have to make good is not one in a quarter of a year; and of the millions of passengers conveyed during the last year, not one has suffered by the least accident. This is a perfection of administration highly creditable to Captain Huish and his staff.—*Railway Times.*

THAMES TUNNEL COMPANY

The number of passengers who passed through the Tunnel in the week ending May 25, was—No. of passengers, 23,209.—Amount of money, £96 14s. 1d.

ACCIDENTS.

East Wheal Fortune.—As Michael Carbis was filling the whim kibble, he was severely injured in the head by the falling of a stone from the shaft. Fortunately, he had a good hat cap, which, no doubt, was the means of saving his life.

Ashton.—At Messrs. Kenworthy's pit, two miners, named Lees and Vaughan, were overpowered by black damp (carbonic acid) by going into a part of the pit where they were told not to go. Vaughan was found quite dead, and although Lees was alive when found, no hopes were entertained of his recovery.

Bridgend.—A fire-damp explosion occurred in a colliery near this place, in consequence of which two men were slightly injured.

Coseley, Wolverhampton.—Henry Turner was killed by a large quantity of coal falling upon him whilst at work in a coal pit.

Dudley.—Daniel Guest was accidentally killed by a fall of coal at No. 2 pit, belonging to the Right Hon. Lord Ward.

Dukinfield.—At the Victoria Pit, of Messrs. Swire and Co., the engine crank broke with a fearful crash, and the fly-wheel having gained great impetus, drew the loaded cage over the head stock; it however cleared the pit, and fortunately no one was hurt—100 men for a time are thrown out of employ by the accident.

Merthyr.—Morgan Morgan was killed in one of the pits here by a fall of coal.

Tamworth.—A youth who is apprenticed in Bolton was working a small model steam-engine, when the boiler, which was made of tin, burst, killing a girl named Catherine Young, aged 5 years, and much injured her sister.

Tipton.—Henry Turner was killed by a fall of coals, at the colliery of Messrs. Wright and Williams, near the Factory Works.

Ystalyfera.—John Howells was seriously hurt by a fall of rubbish from the roof of his stall at Wernfach Pit.

Ystalyfera.—As John Richards was wheeling spoil from the patches to the tip, some earth fell from above, where two men were at work, and striking him on the head, killed him in two minutes.

Fatal Accident in Spring-Field Coal Pit.—It appears that the pit shaft was not sufficiently wide, when J. H. Barber, and Thomas Bates were engaged to widen it, and fitted up a stage or scaffold, consisting of two strong 18-inch boards, with bearers, let into the walls, &c. This stage was erected by Bates, who had contracted for the work, the materials being supplied by Mr. E. Hoyland, proprietor of the pit. Shortly after deceased began work he made a slip, and he was cautioned by Bates to be very careful. From the scaffold to the bottom of the pit was about 12 or 13 yards. Bates was dressing down one side of the pit and deceased the other. Barber, who had his foot upon the side of the pit, slipped, and fell between the scaffold and the side of the pit to the bottom. Bates gave an alarm, and deceased's son, who was at the top of the pit shaft, let down a rope, by which he (Bates) immediately descended. He there found the poor fellow upon his hands and knees, with his head upon the pump pipes, bleeding profusely. He was got out of the pit as soon as possible, but he was quite dead. A report had been circulated that the accident had occurred owing to Mr. Hoyland having neglected to furnish sufficient timber for the scaffold; but, after a lengthened and rigorous enquiry by the coroner, it was found that there was not the slightest foundation for the report, and the jury expressed their approbation of Mr. Hoyland's conduct.—*Sheffield Times.*

Original Correspondence.

THE MANAGEMENT OF MINES.

SIR,—Your correspondent, Mr. Bodkin, is highly indignant at my remarks upon London directors, and thinks I am not justified in many of my assertions. Whilst he accuses me of invective, he thunders the same philippics upon the head of the poor unfortunate Cornishman. I can assure him that it would not be more difficult for me to prove the utter uselessness of nine-tenths of our London boards, than for him to prove the fraudulent proceedings of pursers, and the incompetency of captains. Cornishmen, as you are aware, Mr. Editor, have much to answer for, but still they are ill-used men. They have faults, but not so many as are generally attributed to them; and, with all their vices, they are purity itself, compared with half the men who form our London boards. With all their failings, it cannot be denied that Cornishmen are an intelligent and indefatigable race. They have contributed largely to the science of their country, and they have numbered, and do still number, among them individuals of the strictest integrity, and the most irreproachable character. There is in the Cornishman's nature a genuine kindliness of disposition, characteristic of him alone. He has brought mining to a degree of perfection creditable to the energies of his mind, and though he may inherit many faults which it were better did not exist, his good qualities predominate—his excellence of heart outweighs them all. But these board-room synods—these men of prodigious philanthropy, of glowing honesty—what have *they* done for their country? what are *their* characteristics? They have carried poverty to many a once happy home; they have concocted the most baseless bubbles for the sake of individual gain; they have seduced the public by many a glittering speculation, whose sole nature was deception; and without the slighest claim to talent, with nothing but consummate chicanery and disgusting presumption to note their career, they have been courted—nay, almost idolised—as the very essence of human perfection; whilst the poor Cornishmen were condemned as incorrigible rogues and vagabonds. I hate such contemptible hypocrisy—"my gorge rises at it."

How many mines, Mr. Editor, could I not point out which were formerly managed by directors, and brought to a state of bankruptcy, that are now managed by unpaid committees, and returning profits? I appeal to the mining community at large, if there is not a deal of secresy in all companies managed by directors? I appeal to the mining public if they have that confidence in such adventures that they have in those under the superintendence of unpaid committees? The absolute hopeless effort to obtain correct statements of the affairs of the former is lamentably notorious. There is not that free access for every adventurer—that general publicity, which is the first principle of the Cost-book System. Why, then, should we pay bodies of men to leave us in ignorance of our position, when a clear system can be managed by a committee gratuitously?

I do not propose to comment upon the latter portion of your correspondent's letter, further than that the proposition of a mining school, &c., is what Ben Johnson would have termed a "very pleasant conceit;" but I fear its introduction would not tend to make men more honest. Acts of Parliament may be wholesome evidences of our legislative wisdom—may afford excellent food for gentlemen of the law; but, unfortunately, they only too frequently increase the ills to which we are heirs, and generally also present a loophole where dishonesty, if it has the wherewithal to bribe the Cerberus guarding the place of exit, can make his escape. There are natural propensities, innate peculiarities in man, that no Act of Parliament can eradicate, and the less they are interfered with the better. We want a reform in our mining companies, and I feel assured we shall have it. Give us anything but a board of directors—a change to any other system could not possibly be worse. Had your correspondent been witness to the glaring ignorance, the wretched imbecility, and vain presumption among these gentlemen of the board-room that I have, I feel assured that he would not then deem my remarks false and unjustifiable.

I feel obliged to Mr. Bodkin, however, for his reply to my letter, and I only hope that this correspondence may call attention to the subject in discussion, and that the result may be a system superseding boards of directors in our English mining companies; and if it can also be made to infuse a little more honesty into the breasts of Cornishmen, both myself and Mr. Bodkin will then be satisfied, and mining materially benefitted.

Camborne, May 28. MATTHEW MUNDIC.

ON THE MANAGEMENT OF MINES.

SIR,—Your correspondents, Matthew Mundic and D. Bodkin, appear to be well versed in those abuses which are daily increasing in the mining world. I think they should confine their remarks to the particular cases, and not condemn the whole body. It is well known that there are many mines managed in London, as well as in the country, that are highly creditable to the directors, and profitable to the adventurers, which, had they been in other hands, would be worse than useless. It is not the place of management that should be so condemned, but the parties—the mode in which the schemes are concocted, reported, and the head jobbing quarters (called managing offices), where they are collected. No one but a very raw hand would invest his money in Wheal L., Wheal S. C., Wheal B., and numerous other wheals which might be noticed, and which are often figured in your useful Journal; because, even supposing that the setts were capable of being made profitable, there are neither means, judgment, nor sufficient confidence amongst the parties themselves to effect such an object. It is truly disreputable to the mining commmunity to have such *precious setts* in the market; and it is to be hoped that you, Mr. Editor, will not only disallow them to make an improper use of your valuable paper, in holding up useless and spoiled setts under false colours, but that you will check, by your able pen, the growing evil complained of.

Lincoln's Inn-fields, May 29. J. S. T.

SHARE DEALERS AS MINING MANAGERS.

SIR,—The recent discussions respecting the use made of private communications from mines have surprised me, more especially the part taken up by your talented correspondent, Mr. Murchison. Does Mr. Murchison think that share dealers must neglect their own interest and profession because the mine office is placed under their control? Is he so innocent as to expect that share dealers who have mining offices under their charge would leave all communications from the mines sealed until the shareholders meet? It is preposterous to expect such a thing. I say nothing as to the policy, or propriety, of certain parties uniting together in such places for such purposes; but I do maintain that mining-controling brokers are perfectly justified in availing themselves of all mining communications to suit their own interest. If the public do not like such speculations, why do they join them with their eyes open?—R. S.: *City-road, May 30.*

LANDMARKS.

SIR,—Most persons who know anything of lawsuits are aware of the great expense attendant thereon, and of the fact that serious disputes sometimes arise from trivial causes. How many suits have arisen from so trifling a matter as the removal, or loss, of a landmark which bounded the rights of two or more landowners? A man, therefore, who removes a bound stone, or other thing of that nature, may be doing that which will cost another many hundreds of pounds. To avoid such serious consequences as lawsuits, it would be well for landowners to have every landmark accurately mapped, and *occasionally looked after* by a person expressly employed for that purpose, who will report to the lords the removal of any such mark. In many cases where no landmarks are set up, it would be well to set them up, to prevent disputes on the ground of that want. These remarks are made by me from having very often witnessed landmarks, or which were such, used as *gate posts, door cills, and lintels!* "Cursed is he that removeth his neighbour's landmark," is a denunciation as old as the Levitical law; and as covetousness is cursed in all ages, the persons who steal lankmarks incur a serious responsibility, whether they covet the land, or only that which bound it. I believe that, in general, the covetousness is limited to the stone itself, the thieves having no interest in the land of which it was a mark; but, with that limitation, their offence is heinous before God and man.—R. S.: *Truro, May 28.*

MINE BUILDINGS.

SIR,—I have frequently thought that, when a company intend to work a mine, it would be well for them to take a lease for 99 years (such as is granted to cottagers when they take plots to build on) of the piece of land on which they intend to erect the account-house, material house, smithy, carpenter's shop, and other buildings, and even the engine-house if possible, that when they cease to work the mine, the expense devoted to these erections may not be given up to the lord of the land, as has heretofore been the practice. I do not deem it fair that the adventurers, who *may* possibly never find a pound's worth of mineral for their outlay in a new mine, should be required to give up all these houses to the lord, who has risked nothing. It is *usual*, I am aware, that this should be done; but I ask is it *reasonable?* The lords should be satisfied with the *dues* which they receive out of the products of the workings, which, in general, are quite *high* enough; but if no dues are paid, or if the same will not cover the value of the land destroyed by the mining works, I hold it fair that the lord should be compensated for the waste, in case the lease is granted of the buildings as aforesaid; but not otherwise. On ceasing to work a profitless mine, the buildings could, if so leased, be sold for, perhaps, one-half of their cost, and the amount repaid to the adventurers. R. S.

Truro, May 28.

MINE BUILDINGS.

SIR,—Lime is cheap, and so is labour, both of which might be very properly applied to the exterior of the buildings in some mines, which at present, for the want of the application of a white or yellow wash, present a very shabby appearance to the beholders. Decency is very commendable, even in this respect, and surely it is only necessary to direct the attention of the mine agents to the subject to induce them to expend a few shillings to improve *appearances.*—R. S.: *Truro, May 28.*

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—The lode in Field's engine-shaft, sinking under the 70 fm. level, is from 3 to 5 ft. wide, containing a great quantity of mundic, interspersed with copper ore. The lode in the 70 fm. level, east of said shaft, is 4 ft. wide, yielding from 8 to 9 tons per fm., worth 65*l.* per fm. The lode in the winze sinking under the 60 fm. level, east of engine-shaft, is 3½ ft. wide, worth 60*l.* per fm. The lode in the 70 fm. level and winze is hard, and presents a beautiful appearance for durability. There is no change in any of our tutwork operations since my last report. Our tribute pitches are looking well. Our sampling, on Tuesday, the 28th May, will be about 90 tons of good copper ore.

BARRISTOWN.—The lode in the 30 fm. level end east is small at present, containing but little ore, although there is an indication of more lode standing to the north of the end, which will be proved in a few days. The stope in the bottom, behind this end, looks pretty much the same as last reported, producing from 8 to 10 cwts. of lead per fm.; but we are obliged to suspend it, until the winze in the bottom of this level is holed to the 40. In this winze we are stripping the lode only, which looks very much the same as the stope. The stopes in the back of the 30 fm. level are producing about 5 cwts. of lead per fm. In the 26 fm. level end east the lode is large, and thinly mixed with lead; in the rise in the back of this level, to the 18 fm. level, the lode is 2 ft. wide, with a branch of lead about 3 in. wide on the north wall of it. We have leaders of the lode in the 40 cross-cut. The lode in the 30 fm. level west end, is not regular but orey.

BEDFORD UNITED.—The ground in the 115 fm. level south is without alteration. In the 103 fm. level east the lode is 3 ft. wide, worth 4 tons of good ore per fathom. In Andrew's winze, in this level, the lode is 2 ft. wide, producing good stones of ore; the lode in the stopes in the back of this level is worth 15*l.* per fathom. We are still driving by the side of the lode in the 90 and 80 fm. levels. The lode in Bray's winze (resumed sinking), in the 90 fm. level, is 2 ft. wide, and worth from 4 to 5 tons of ore per fm. The lode in the 70 fm. level east is 2 feet wide, producing saving work, and very promising.

BODMIN MOOR CONSOLS.—In driving west our lode is improving. We have now 14 in. of good saving work; our lode is 4 ft. big, and improves as we sink.

BRYN-ARIAN.—The engine-shaft is down 8 fms. 4 ft. below the 10 fm. level; the lode is 6 ft. wide, and will yield from 15 to 20 cwts. of ore per fm. The 10 fm. level east is much the same as last reported—a large lode, with small branches of ore; in driving the cross-cut north from the same level west, as mentioned in the last report, we have intersected several branches of ore; and although we are not yet through the lode, the last 6 ft. we have driven has produced 1 ton of ore; this looks cheering, as we are 10 fms. below the stope in the bottom of the adit, and 3 fms. west of their best bunch of ore; the stope under the adit level east is still yielding from 12 to 15 cwts. of ore per fathom; the stope under the same level west is yielding 1½ tons of ore per fathom. We have commenced clearing up Pensarn old workings, and find several good stones of ore in the attle.

CARTHEW CONSOLS.—Since my last report we have completed the sinking of the engine-shaft to the 75 fm. level, and have extended the ends north and south from 2 to 3 fms. In the north end the lode opens very well, yielding good work in lead and copper; whilst in the south end, until to-day, we have had but little appearance of a lode, a slide having come into contact with it just in this end of the shaft, but the slide and lode are now found to be separating, and the latter presents a good appearance. In the north end, 65 fm. level, we yet continue to drive in very good ore ground (both lead and copper), as we have been doing for several fathoms; in the bottom of this level a good lode is gone down for upwards of 30 fms., which indicates to us that the level below will be one of great worth, especially when we compare the price of the copper sold yesterday (the greater part of which was got from the 65 fm. level) with the price of the former sale, which was obtained from the levels above. The 65 fm. end south is fast improving, having got again into clean ground. A very good discovery was made in the winze sinking in the bottom of the 48 fm. level south yesterday morning, in opening into a rich lode, lead and copper, about 3 ft. wide, the whole of which is very good work; this winze, it will be remembered, is being sunk immediately under Cocking's pitch, and a few fathoms only ahead of the 65 fm. end south, and which will afford us backs 15 fms. high, a matter of very great moment.

COMBLAWN.—I have much pleasure in informing you that our setting yesterday, at this mine, was most satisfactory. We waited some time for Mr. Murray, but that gentleman, I understand, was obliged to go to town on Saturday last; we did not, however, learn this until late in the day, and it occasioned great disappointment. After the engine was fairly started, a few mine agents of the neighbourhood, who were invited, amongst whom were several of the most experienced miners, particularly Capt. Lean, of Holmbush, spoke highly of the prospects of the mine, and were sanguine of success. A little time must necessarily elapse before the pitwork will be completed to commence forking the water. We shall also as soon as possible push on the clothing of the cylinder pipes and the roof of boiler-house, to prevent, as much as possible, the rapid condensation of the steam. When this shall have been completed, I have a strong hope that its economy and efficiency will be considerably increased. Its power you are aware is doubled from what it was in its combined state at Wheal Martha—a fact requiring some further notice at a future day. I have set the shaft to clear up and cut down 11 ft. by 7, to nine men, 4 fms., at 6*l.* per fm., the takers to pay all costs, such as filling, landing, &c. I hope in a short time to be able to give you some account of the prospects of the mine.

DEVON AND COURTENAY.—The lode in the engine-shaft continues to produce irregular, but good stones of ore. The 50 fm. level end is without alteration. The ground in the rise is not quite so easy for raising as it was. In the bottom of the adit the lode is strongly impregnated with mundic, and although it is not rich for copper ore, yet it is of a very promising character.

EAST CROWNDALE.—The middle shaft, on the south lode, is now down to the 40 fm. level; the lode in the present bottom is poor. We intend driving east in this level with all speed; and as soon as convenient, which we hope will be in about eight days, we intend to drive an intermediate level westward in tin, which we have sunk through in the shaft. The 28 fm. level east is driven as far as Harris's shaft; in this end we have driven 6 fms. in the past month—three of which is tinny ground; the lode in the present end is about 1 ft. wide, producing a little tin. We have now directed the men to drive north towards Harris's shaft, which we expect will be communicated in about a fortnight. As soon as this is accomplished, we intend to set a rise in the back of the 28, just under a shoot of tin; this will enable us to judge of the value of the tribute ground. The north lode in Harris's shaft is poor; we do not think it advisable to drive westward on it just now. The dressing apparatus for the slimes in the Crowndale field is complete; and the slimes will set on tribute for 12s. in 1*l.* The drum is not yet complete for drawing; and when it is we think that both of the horses can be kept to advantage, as they will be employed both in bringing materials and carrying tin and coals to West Downs. We have sampled this day, for March and April, computed 12 tons of tin. We are not yet in a position to speak with any degree of certainty as to future results; but we shall soon be able to reduce the tutwork expenses, and set more tribute ground. We hope these operations may prove successful.

EAST WHEAL GEORGE—*May 20.*—The wheel was put in motion on the 18th inst., and appeared to do its work well; the count-house, smithy, and powder-house are now complete. It is expected that the shaft will be down to the point of intersection (by means of cross-cut) with the lode in five weeks from the present time. The shears, pumps, &c., are in order, and no delay likely to arise; the floors are in course of making, and other work progressing satisfactorily. An extension of the sett has been acquired, and all looks well. Much credit is due to Capt. J. Carpenter, in having directed and superintended the execution of the several works, as also to the agents and workmen employed, the wheel having been set to work, and the several erections and operations at surface completed by the proposed time, and within the estimate. A set of launders to the wheel from the leat has been constructed, so as to give a 38-feet fall, which may be further increased 12 ft. if required, for other purposes. It is expected that the lode will be taken in the 12 fm. level early in August. The quantity of ore lying at bank is from 10 to 12 tons, averaging 18 to 25 per cent. The adit level has been extended 20 fms. at a shallow depth, and the lode sunk upon 3 fms. to prove its underlay. The engine-shaft is expected to take the lode at 40 fms. depth, assuming the underlay to be the same as at present.—H. ENGLISH.

May 27.—The men completed the leat, and weir last Thursday, and the wheel was put to work on Saturday. The miners have commenced operations in the shaft, sinking by 12 men with the object of getting the shaft down as soon as possible, and which it is contemplated will be effected by the 24th June, so as to put out a cross-cut to take the lode. The carpenters are engaged in erecting the capstan, and the smiths fully employed—Mr. Adams, with several woodmen, are busy felling timber in the wood. I am happy to say that the wheel works well, with little or no friction. Capt. Carpenter was here on Saturday. Weather very bad.—W. MANSELL.

ESGAIR LLEE.—Our pay and setting was on the 25th May, of which the following is an account:—The deep adit, west of the junction, on the caunter lode, by six men, 4 fms. stent, or the month, at 4*l.* 10s. per fm. The 12 fm. level, east from the surface, on the caunter lode, by six men, 4 fms. stent, or the month, at 5*l.* per fm.; a winze to sink below the 12 fm. level, east from surface, on the caunter lode, by six men, 4 fms. stent, or the month, at 6*l.* per fm. The stopes in the bottom of the shallow adit, west of Morgan's winze, to carry all the lode, or 4 ft. wide, by six men, 9 fms. stent, or the month, at 3*l.* 15s. per fm.; judging from present appearances of the lode in the winze below the 12 fm. level, and its little underlay, there is much reason to believe that this lode is coming down to the north of the deep adit, west of the junction; and we have commenced driving north in the deep adit, in order to prove the same. While on this subject, I may remark the winze is now down 3 fms. 3 ft. 3 in. below the 12 fm. level, and for the first 3 fms. the lode, on an average, has produced from 20 to 30 cwts. of ore per fm., but during the last 3 ft. at the rate of from 30 to 40 cwts. of ore per fm. In consequence of the lode being so productive, and the absolute necessity of communicating the winze with the deep adit with all possible speed, we have set the winze at 6*l.* per fm.; but in order to induce them to put their best hands before, we have promised, in case they sink their stent this month, which, we think, they are likely to do, to increase the price to 7*l.* per fm. The caunter in the 12 fm. level, east from surface, is improved since my last; the orey part of the lode is about 4 ft. wide, and has every promising appearance, and yielding from 15 to 20 cwts. of ore per fm.; the present end is now 6 fms. east of the winze,

down 3 fms. 3 ft. 3 in. The lode in the stopes in the bottom of the shallow adit, west of Morgan's winze, is much the same as last reported, yielding from 15 to 20 cwts. of ore per fm.; since my last we have had two men stoping in the bottom of this level east of Morgan's winze, and the lode here seems to improve as it extends east of the junction, and will at present yield about 6 or 8 cwts. of ore per fm.; but we shall be obliged to suspend most of our stoping, in order to build the tipping slide, and laying out the new dressing-floors, having no place to put the work. The mill-house is up, and the roof putting on. We have now on the mine the whole of our castings to complete the erection of our machinery; and I am glad to say the segments of the large water-wheel, received from Messrs. Nicholls and Williams, Tavistock, appear to be of the best quality and description, and we hope, by using every effort in our power, to be be able to complete its erection by the latter part of June.

HEIGNSTON DOWN CONSOLS.—The lode in the 35 fathom level, east of the cross-cut, is from 4 to 5 ft. wide, and will now yield 4 tons of ore per fm. In the winze sinking below the 35 fm. level, 13 fms. east of Victor's winze, the lode is 2 ft. wide, carrying a leader of ore, 8 in. wide, with indications of further improvement. The cross-cut south, in this level, is still hard, and is being spotted throughout with yellow copper ore. The lode in the 45 fm. level, east of Victor's winze, is without important alteration, as also the cross-cut south of this level.

HENNOCK.—We have got in the lode about 6 ft. in the 10 fm. level, and and, so far, it produces some good work for lead; and I think, from what I can see in the adit level, it is full 20 ft. wide, consisting of gossan, barytes, soft spar, &c. I expect we shall have a very large lode in the 10 fm. level.

HOLMBUSH.—The lode in the 132 fathom level, west of diagonal shaft, is 14 in. wide, composed of spar, mundic, and stones of copper ore. The ground in the 120 fm. level cross-cut south, towards the flap-jack lode, is favourable; the lode in the 120 fm. level south is 5 ft. wide, composed of quartz, prian, and stones of lead, saving work. The flap-jack lode, in the 100 fm. level, east of the great cross-course, is 20 in. wide, composed of spar, mundic, and stones of copper ore. The pitches in the back of the level are yielding a fair quantity of ore.

KIRKCUDBRIGHTSHIRE.—The lode in the winze sinking in the 62 end west is 3½ ft. wide, of a kindly nature, yielding 7 cwts. of lead to the fathom. The lode in the 50 end west is large but unproductive. The lode in the rise in the back of the 40 west is 3 ft. wide, with a good rib of lead, 3 inches in width, coming in from the westward. From the increase of water for the wheel, we hope soon to resume full working again, both on tutwork and tribute.

LLWYNMALEES.—The engine is now finished; it is a beautiful piece of work, and does Mr. Green, of Aberystwith, much credit. We have 20 tons of ore ready in store; had the water lasted, we should have had over the quantity promised—35 tons. The boiler having been sent to Chester in error, has been lying there for want of a vessel to convey it to Aberystwith, causing further delay. The walls of engine and boiler-house are now upwards of 12 ft. high, and most likely in my next report I shall be able to say that the walls are all up to the height specified, I am proud to say that our 8 fm. level west has a most beautiful lode in it, and looks promising for further improvement. The stopes over the 8 fm. level, from 1 to 6 fms. west of western winze, look quite as well as last reported; the stopes over the 8 fm. level, from 6 to 11 fms. west of western winze, continue much the same. We have been rather short of water this week, but hope we shall be in full course of working on the floors next week, as the rain we have had yesterday and to-day will, no doubt, fill our pool ere Monday.

NORTH BULLER.—King's shaft, sinking on King's lode, is now perfectly dry at the bottom (20 fathoms) which will enable us to sink, we suppose, 4 or 5 fathoms deeper; this is a very great advantage, as we shall then drive on the course of the lode at a sufficient depth to make a good trial of the lode; we are also bringing up a level on the course of this lode from the valley at the western boundary of the sett, which we shall derive many advantages from. It will come into King's shaft at about 25 fms. in depth, and will serve to drain the mine, and also ventilate it, and thus save us the necessity of sinking another shaft for air; we shall, without doubt, raise a good deal of tin from the lode in the course of driving this level. Louisa shaft is down nearly 5 fms., and the lode is about 2 ft. wide—a very strong lode, containing a great quantity of mundic, with a fine prian, and some tin. The appearance of the mundic is almost a certain evidence of copper ore at no very great depth. We are putting on all the force at these three points that can be advantageously done, and shall develope them as rapidly as possible. Our mine being situated in the very heart of this great mineral district, we are frequently visited by the captains of our neighbouring mines, and one and all concur in the belief that we shall have a splendid mine.

PENZANCE CONSOLS.—I believe our prospects at present are much more favourable than they have ever been; we have a good course of tin on the north lode, worth 35*l.* per fathom, and still improving as it goes down; we are also sinking a winze 5 fms. west on another lode, where we have also a good course of tin, worth 15*l.* per fm.; we have also driven 7 fms. 4 ft. west of Carthew's shaft, and the lode that we have left in the bottom going down for that length is worth 30*l.* per fm., and the end still kindly—good tin ground, all in whole ground as it goes west. We have also good tin ground in Carthew's shaft, the lode dipping west 4 ft. in a fathom, and the shaft is a downright. We are going through it, but the lode is whole in the shaft, and looking kindly, and other places are much the same; but as we are sinking the shaft, and driving cross-cuts and ends, sinking a winze, and exploring the mine, we shall not be able to break half the quantity of tin, under present circumstances, as we shall in three months time. I believe I can say that our prospects were never so favourable as they are at present.

SOUTH PLAIN WOOD.—We have driven 27 fms. west on Nicholson's lode; it is from 3 to 5 feet wide, composed of gossan, peach, prian, quartz, spar, and copper ore, very rich in quality; and the strata being killas, these are great indications of a rich and productive mine. We have driven our main adit from 17 to 18 fms., and have cut another caunter lode from 1 to 3 ft. wide, composed of mundic, jack, and copper; and the opinion of myself and others is that, in sinking some 10 fms. under the present level, it will greatly benefit the adventurers. There are four lodes further south, and I would recommend putting in the engine, and sinking some 10 fms., and making a return of copper immediately.

SOUTH WALES MINES.—Our pay and setting was on Saturday last, the 25th of May, and the following is an account of the latter:—The 12 fm. level, east of the cross-cut, on the south, or Frongoch lode, by four men, 4 fms., or the month at 3*l.* 10s. per fathom. There is no alteration in the lode to speak of since my last; the lode is large, and producing a little lead, but not sufficient to set a value on. The shaft to sink below the surface, about 100 fathoms east of the old workings, by four men, 2 fms. stent, or the month at 5*l.* per fathom; the lode at present seems to improve in depth, and is looking a little better than when last reported, producing some good saving work.

SOUTH WHEAL TRELAWNY.—We some time smce intersected a small vein in the western cross-cut, in the 50 fm. level, about 8 fms. from the shaft, in connection with a flookan slide, which was very small, and at the time was not thought to be the lode; but after extending the cross-cut under the perpendicular of the lode, as seen in the 30 fathom level, without meeting with any other branch, we commenced opening ground on it northward, and after extending the level 2 fms. 1 ft. 4 in. on its course, we have got clear of the slide, and the lode (in the present end) is found to be 20 in. wide, and in a settled state; it is composed of fluor-spar, barytes, fine grain mundic, and crystals of copper ore, underlaying east 9 in. in a fm., and its bearing 28° east of north; its composition is everything we could wish for, with the exception of lead; however, there is a decided improvement in its appearance, compared with the 30 fm. level, but we must go deeper for lead; we have sett to drive on it at 45*s.* per fm. The engine-shaft is sunk 7 fms. 1 ft. 6 in. below the 50 fm. level; the ground is still a favourable blue killas, and is set at 15*l.* per fm. Another month will bring us to the 60 fm. level, and in a short time afterwards we shall see the lode at that depth, which I hope will be a good one.

TREGEAR CONSOLS (St. Kew).—We have a discovery of importance here of a fine lode full of lead, particulars of which I will forward you next week.

TRELEIGH CONSOLS.—In the 100 fm. level, west of Garden's shaft, on Christoe lode, lode 15 in. wide, with stones of ore. In the 90, west of ditto, the lode is 2 ft. wide, worth 12*l.* per fm. In the winze below the 80 fm. level, west of cross-cut, on the north part, lode 20 in. wide, worth 14*l.* per fm. In the 70, west of Garden's, lode 3 ft. wide, worth 10*l.* per fm. In the winze below the 60 fm. level, lode 2 ft. wide, worth 6*l.* per fathom. The engine shaft below the 40, on Parent lode, is 12 fathoms 2 feet below the 40 fm. level; we shall drive north towards Parent lode next week. The 40 cross-cut, south of ditto, is driving towards the middle lode. In the rise above the 40 fm. level, lode 20 in. wide, worth 4*l.* per fm. The winze below the 30 fm. level is suspended, on account of the water being too much for sinking. In the adit, east of Nicholson's shaft, on middle lode, lode 15 in. wide, with good stones of ore.

WELLINGTON.—The ground in the engine-shaft sinking under the 42 fm. level still continues hard; the lode in the 42 fm. level, west of engine-shaft, is about 8 in. wide, and presenting a more favourable appearance than for some time past; the lode in the same level, east of the said shaft, is nearly 2 ft. wide, having a promising appearance; this level is within 3 fms. of Parcolly shaft, where the level is from 1 to 2 ft. wide, and worth 6*l.* per fm. for tin. The lode in the 32 fm. level, east of Parcolly shaft, is 18 in. wide, worth 8*l.* per fm. for copper ore and tin; the winze referred to in the last report, sinking under the 32 fm. level, east of the said shaft, cannot be sunk deeper until the water is drained by the 42 fm. level. The cross-cut in the adit level, north of north lode, is progressing favourably. There is no change to notice in the adit level, driving east, on the north lode; but in the same level west the lode is 2 ft. wide, containing gossan, copper ore, and tin, looking very cheering; this indicates something good near at hand. I hope the new shaft in the western part of the mine will be communicated to the adit level next week, after which we shall be able to resume the driving of the adit level both east and west of said shaft, and also to set pitches on tribute: we have sunk here nearly 10 fms. under the adit level in good ore ground, and are driving east and west on the course of the lode, and, as far as the ground is opened, is worth from 8*l.* to 10*l.* per fm. for copper; this part of the mine is looking well. Our tribute pitches, and the different drivings for the last month, have yielded a fair quantity of copper ore. Our copper sampling this day is computed 171 tons.

WEST WHEAL JEWEL.—In the 85 fm. level, west of Williams's cross-course, on Wheal Jewel lode, lode not taken down in the past week. Treweek's winze, in the 70 fm. level, west of ditto, on the same lode, producing stones of ore. Carkeek's winze, west of ditto, when last reported worth 20*l.* per fathom. The 57 fm. level, west of ditto cross-course, on the same lode, unproductive. The shallow adit level, west of Tregoning's shaft, on Tolcarne tin lode, worth 7*l.* per fm. The deep adit level, west of ditto shaft, on the same lode, unproductive. The 12 fm. level, west of ditto shaft, on the same lode, unproductive; the stopes in the back of the 12 fm. level, west of Pryor's winze, on the same lode, worth 23*l.* per fm.; the stopes in the bottom of the same level, east of Tregoning's shaft, on the same lode, worth 25*l.* per fm.; the stopes in the bottom of the same level, west of Tregoning's winze, on the same lode, worth 26*l.* per fm. These stopes are working on tribute.

WHEAL LAWRENCE.—We have cut a part of the lode in driving to the east of the shaft, which is producing some saving work for lead, and looking kindly for still making more, and better in driving south.

WHEAL MARY ANN.—Pollard's shaftmen are employed in putting in penthouse, &c., preparing to sink under the 60 fm. level. The 60 cross-cut, west of the shaft, is stopped. The lode in the 60 fm. level, north of the shaft, is 1½ ft. wide, worth 5*l.* per fathom; in the same level south it is also 1½ ft. wide, worth 4*l.* per fathom. The lode in the 50 fm. level south is 2 ft. wide, worth 5*l.* per fathom; the lode in the winze sinking under this level, north of the shaft, is 1½ ft. wide, and worth 6*l.* per fm. The lode in the 4 fm. level south is 1 ft. wide, but unproductive; the lode in the winze sinking under this level has not been taken down since my last report. The lode in the 30 fathom level south is 1½ ft. wide, worth 4*l.* per fm. The sinking of Barratt's shaft is suspended on account of the water. The lode in the winze sinking under the 60 fm. level, north of the shaft, has not been taken down since my last report. The lode in the 60 fathom level, south of the shaft is 4 ft. wide, worth 15*l.* per fm. The stopes generally are producing a fair quantity of lead. The parcel of lead ore (computed 90 tons) was sold, on the 21st of May, to the executor of the late Joseph T. Treffry, Esq., of Fowey, at 19*l.* 7*s.* 6*d.*

WHEAL PENHALE.—The engine-shaft is now sunk from 5 to 6 fathoms below the 65 fm. level, the ground of which is improving. The lode in the end, in the 30 fm. level north, is very large, and is found to be also much improved—this end is now very near under the run of lead ground in the levels above; the lode in the south end, in this level, continues much as it has for some fathoms, yielding a good quantity of work in lead; the lead ground in this end, it will be borne in mind, extends further south than in any level above, and it yet continues to hold well, which proves our ore ground to be lengthening in depth, and the lode in the bottom of this level, north and south, is much better than in the back; taking this, and the improved state of the ground in the shaft into consideration, leaves a pleasing anticipation of the 40 fm. level. A good lode continues in the winze, both north and south, in the 20 fm. level.

WHEAL SARAH.—I have to state that the crusher is not yet to work; the remainder of the castings were not brought on the mine till yesterday, and the carpenter will not be able to complete the work without a further supply of timber, which they stand in want of immediately. In the stopes in the back of the 20 fm. level south the lode is 1 ft. 3 in. wide, producing fine gossan and lead. In the 20 fm. level south the lode is 1 ft. 6 in. wide, with spots of lead; the 20 fm. level north is poor. The 30 fm. level south is from 18 in. to 2 ft. wide, looking very promising: lead all through it, and turning out very good work. In the 30 fm. level north the lode is from 15 to 20 in. wide, with spots of lead; on the whole, the mine is looking better than it ever has done. We require machinery to sink the old engine shaft deeper, or sink a new one south on the course of the lode, which I should recommend for air and other conveniences for working the mine, and which could be done by the water-wheel; I consider this a good time in the year for doing it, as our little engine will keep the water in the old mine through the summer.

WHEAL TRELAWNY.—At Phillips's shaft, in the 82 north, the lode is 3 ft. wide, worth 9*l.* per fm.; we are still rising in the back of this level, as noticed last week. In the 72 south the lode is 2 ft. wide, worth 3*l.* per fm.; in the winze sinking under this level, south of the shaft, the lode is 1½ ft. wide, worth 8*l.* per fm. In the 62, north of the shaft, the lode is 3 ft. wide, worth 8*l.* per fm.; in the winze sinking under this level the lode is 3 ft. wide, worth 17*l.* per fm. At Trelawny's shaft, the 92 cross-cut is driven 6 ft. towards the lode. In the 82 north the lode is 3 ft. wide, worth 8*l.* per fm.; in the 82 south the lode is 4 ft. wide, worth 9*l.* per fm. In the 72 north the lode is 3½ ft. wide, worth 11*l.* per fm.; we have again resumed sinking the winze in the bottom of this level in the killas, to ventilate the level below. At the north mine, in the 68, north of Trehane boundary, the lode is 2 ft. wide, worth 7*l.* per fm. In the winze sinking in the bottom of the 55, north of Trehane, the lode is 1 ft. wide, worth 5*l.* per fm. In the 50, south of Smith's, the lode is 2 ft. wide, worth 5*l.* per fm. In the 40, north of ditto, the lode is as last reported. In the winze sinking under the 30 fm. level the lode is 6 in. wide, interspersed throughout with lead. The stopes are as usual.

WHEAL TRESCOLL.—Our rich discovery of tin in this mine is greatly improved since my last report. We have driven now on the course of the lode full 13 fms. The lode in the eastern end is 2 ft. wide, with a solid leader of tin, full 18 in. We have also made a rich discovery of tin in the bottom level going east; I think it is better than the former, but this I shall be able to report more fully next week, as we only cut the lode yesterday, and found it very rich. Two of the adventurers were here last week, and were quite satisfied as to the appearance of the mine, and our rich discovery. We sent a small quantity of tin to market last Friday, and had the best price given, and shall send a larger quantity on Friday week. Everything in the mine at the present time is looking prosperous, and I hope, in future, to raise sufficient tin to pay cost, and make dividends.

WHEAL VINCENT.—The lode in the west end in the moor from the engine-shaft is somewhat smaller since last report, but still producing tin; also the lode in the east end is 2 ft. 6 in. wide, and producing decent work for the stamps. We have drawn a large pile of work to the surface from those ends and stopes the last week for the stamps. The engine is keeping the water very well at present. The stamps are at work day and night. We have not got the lode on the hill in the costeaning pits as yet. Our new lift is brought on the mine; I shall not move the old lifts while they are keeping the water.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINING ASSOCIATION.

Bananal, March 13.—I am perfectly aware, and do act accordingly, that economy is next to our principal object; and I beg to assure you, that no unnecessary expense has been gone into, but from the bad state in which I found your mine, stores, and other property, strenuous exertions were immediately necessary, and knowing, from a long experience in mining, that saving of time is a great object, I did not, therefore, hesitate to go into the work boldly; and I flatter myself that you will be satisfied with what has been done, as our greatest enemy (the water) has been subdued, and the possibility of prosecuting the mine in depth made certain. Our gold returns, too, I also hope will prove satisfactory, and give encouragement to the shareholders. Although Gibson's shaft is fathoms deeper than any other point in the mine, it has not effected the drainage of Thomas's. A few days since we made an attempt to drain this place, and to commence operations on the vein in the bottom, but we found the water so plentiful, that we could not do anything there without great difficulty and expense; we must, therefore, make up our minds to wait till the 24 fm. level can be driven under it (a period, I hope, not far distant), when all the ground above that level will be drained effectually. Gibbes's shaft is now idle, from the great influx of water; it is only 5 ft. below the 14 fm. level, and we are obliged to put down pumps to keep out the water, notwithstanding these places being within a circle of 10 fms., and Gibson's shaft being by far the deepest point, it has made none, or very little difference, to the water in the 14 fm. level, and proves the opinion that the Bananal pumps were draining the Pitangin Mine was erroneous. I will do every thing in my power as far as prudence will dictate to assist the Messrs. Tregonings in their experiment. I deeply regret the loss of their two mechanics and a miner, Nicholas Andrew, but think it will not much retard their work, as I will take measures to supply them with a carpenter, smith, and miner, on their arrival here, should they not have suited themselves before. Our works here progress with great regularity, but, I regret to say, our produce is small. A few boxes of work have been obtained for the washing-house from the Big Pump vein, in the 14 fm. level, near Gibson's shaft; it, however, yielded very little, as will be seen by the gold returns. The stamps, I also regret to say, have been very poor. Capt. Brokenshar's report shows, as I before stated, that our attempt to work in the bottom of Thomas's shaft was a failure, on account of the water not been drained. I have, however, great consolation in knowing that the time is not far distant when all the ground will be drained, and the auriferous formation extracted dry. Gibson's shaft is going down very satisfactorily; it is now within 18 in. of 9 fms. below the 14 fm. level, and I look forward with great anxiety and hope to the result of the extraction of these backs. We have now the use of Gibbes's shaft for hauling purposes from the 14 fm. level; this will greatly facilitate our underground operations, and will effect a great saving in horse labour; the whim and all necessary attachments have been put on the best principle, and the advantage derived over the old mode is evident. I have before stated that we have been obliged to suspend the sinking of this shaft on account of the water, but the temporary machinery for working a 10-inch pump by the iron wheel is in a forward state, and I hope will be ready to work to-morrow; this contrivance will enable us to get down to the 24 fm. level without further difficulty. The other points of operation present nothing interesting, or calling for remark.

Gongo Soco.—I have great pleasure in stating that we have again a tolerably good produce from here, 5 lbs. 6 ozs. 17 dwts.—out of which the Great Western stamps yielded 1 lb. 4 ozs. 15 dwts. Since writing the foregoing, I have received intelligence of the arrival of the Messrs. Tregoning, and with two miners (the whole that remains of their party), on the evening of the 11th inst. I intend leaving Bananal for this place to make the necessary arrangements.

Bananal, March 23.—I last had this honour on the 13th inst., and then informed you of the arrival of the Messrs. Tregoning, and the remainder of their party, at Gongo Soco, on the 11th inst., and their letter announcing it reached me here on the evening of the 12th—the 13th being post-day, prevented my being in Gongo till the evening of the 14th—the 15th was occupied in preliminary matters, such as collecting our materials, horses, mules, &c., and cleaning up the stamps, and on the 16th the new party commenced operations; they appear very sanguine of success, and I think are very persevering young men; and have no doubt, that if the experiment now in hand is possible to be successfully carried out, Messrs. Tregoning will do it. I am happy to learn from the agents in Rio, that the greater part of the materials brought out by the Messrs. Tregoning are on the road. You will be pleased to see the produce from the last three days' stamping at Gongo—viz., from the 13th to the 15th inst. inclusive, being 4 lbs. 0 oz. 4 dwts., or rather more than 1 lb. 4 ozs. per diem.

Bananal.—Here I am glad to inform you, that we have had a little improvement in our prospects during the last 10 days; the stopes below the 14th fm. level, on the Big Pump Vein, have yielded some work for the wash-house, which produced 1 lb. 3 ozs. 4 dwts. of gold; the vein is large and exceedingly promising, and is very probably a continuation of the shoot from whence the gold was obtained in June last; this is the more encouraging, as the principal line, and that which proved so productive in December and January, is below us.—[Here reference is made to a marginal sketch showing the workings.] The vein to the north of Goldsmid's, at the adit level, is looking promising, and I am very much of the captain's opinion, that if we intersect in the course of driving any cross veins, it is very probable that we shall find them productive; and this being in virgin ground, the chances, I think, are favourable. We are again in good working order at Gibbes's shaft, having completed the temporary machinery spoken of in my last respects, and which does its duty admirably. I hope the sinking of this shaft will now be continued without further interruption.

LINARES MINES.—The following has been received from Mr. H. Thomas:

Linares, May 18.—Since my last our operations in the mine have proceeded with regularity, and with little to report on. The tribute pitches continue productive, and you may be assured that we will increase the number as soon as practicable. The lode in Wilson's shaft, during the past week, has not been quite so good as before reported, but the shaft is still sinking in good tribute ground, and getting nearer every week to its communication with the third level, which we so much desire for facilitating our future progress. Annexed you will find note of stock account, most of which is sacked up in readiness for the carretas, which were reported due on the 16th inst.

Pozo Ancho—Lead in Store.

1850—May 11.—To account furnished	*Arrobas*	2824	0 *Lbs.*
18.—Weighed in to this day		846	13
(about 10 tons.)			
To next account	*Arrobas*	3670	13 *Lbs.*
(about 43 tons.)			

NATIONAL BRAZILIAN MINING ASSOCIATION.

Cocaes, March 12.—You are aware, from the last report, that since communication has been made from Hamilton's lower stope to the western upper part of Hartley's eastern one, the operations have been resumed at the latter point, and which have been continued by a large party of negroes, in order to reach, as speedily as possible, the line of the south vein in Hamilton's stope above, where we have always been expecting large deposits of gold. On the 8th inst. a beautiful vein was discovered at the lower part of Hartley's western stope, near the footwall of the layer; but we were unable to extract any portion of it, on account of that part of the excavation being generally kept a few feet in advance; but the day following five or six boxes full of ore were obtained, most likely containing as many marcos of gold, which, however, could not be cleared on that day, from its being brought out too late in the evening; it was, therefore, left till yesterday, when mks. 9 3 3 60 were washed up, and to-day's washing will, in all probability, be very nearly an equal quantity.

Cocaes, March 22.—Since the 12th inst., the greatest number of hands employed at any one point in the mine department has been stationed at Hamilton's lower stope, excavating westerly on the line of the southern vein, at which point we are under great expectations of obtaining some large deposit of gold; but hitherto nothing more favourable than before has been discovered, further than that of some promising samples, and the appearance of the lode being no less encouraging than when last reported on; hopes of an improvement at this quarter are still entertained.

Cocaes produce, from the 6th to the 22d March	*Mks.*	34	4	0 54
Cuiaba " 27th feb. to the 19th March		5	1	6 0
Total	*Mks.*	39	5	6 54

ST. JOHN DEL REY MINING COMPANY.

Morro Velho, March 19.—Gold extracted to date, 7712 oits., from 409·26 cubic feet of sand (result of ten days' stamping), yielding 18·84 oits. per cubic foot. This, so far, is an excellent produce, but I fear the next ten days will show a very inferior result, since, in consequence of the accident which occurred on the 9th (as detailed in my Diary), the hauling from the Bahu Mine was wholly stopped, until the water was brought back to the hauling engine, and we were obliged to supply its place by upwards of 200 tons brought in from the refuse heap—thus very materially lowering the standard of the ore sent to the stamps. Stamps working (18 days average), 94·38 heads. The supply of ore from the mines has not during this month exceeded the daily requirements of the stamps, and during the temporary stoppage of the Bahu hauling machine, above alluded to, necessarily fall considerably short. We are now, however, doing better, and I hope during the remainder of the month the supply will be more abundant.

[Gold arrived per *Express* packet, 391 lbs. troy.]

CAMBORNE CONSOLS MINING COMPANY.

A special general meeting of shareholders was held at the offices, New Bridge-street, on Thursday, May the 23d,

Colonel T. G. Harriott in the chair.

Mr. Von Uster (secretary) read the advertisement convening the meeting.

The Chairman briefly addressed the shareholders, and reminded them that, inasmuch as they were prevented by the company's Deed of Settlement to transact at a special meeting any other business than that which had been specially referred to in the advertisement and notices convening such meeting, he would propose that they should at once proceed to discuss and determine the question the directors would feel it their duty to lay before them; after which he would call upon the manager of the mines to read to the meeting the several reports of the present condition and prospects of the mine, so that the proprietary might come to a determination as to future proceedings, in order to enable the directors to take the necessary preliminary steps for the more expeditiously acting upon and carrying out the resolutions that might be come to at the next annual general meeting, for effectively and fully developing and opening the valuable mines in which they are mutually interested. He had the gratification of observing, that out of 812 votes no less than 762 were represented by the company present. He then briefly remarked to the meeting, that they had been called together for the purpose of sanctioning and confirming certain payments made by the board for and on behalf of the company.

A statement and particulars of such payments having been submitted, and duly considered, it was unanimously resolved, "That the several payments referred to be approved, and that this meeting sanctions and confirms such payments and allowances so made by the directors."

Mr. Daniell (the resident manager of the mine) then read a report made some time since by Capt. Matthew Francis, of Goginan, who at the time was specially sent to the Camborne Consols Mines, to inspect and report upon the value and prospects of the company's property, which was of a most satisfactory nature; and also one from Capt. F. Daniell, which fully entered into the position and prospects of the sett, the number of rich mines by which it was surrounded, and the belief that, at no distant day, the mine by its yield will bear out the most sanguine views expressed, and rate with the other large and valuable mines in this great mining district. These reports are much too long for insertion, which, however, is the less to be regretted, as they are but a reiteration of what has already appeared in the *Mining Journal*. It is gratifying, however, to find in the following brief statement of Captain Joseph Vivian, the manager of North Roskear, Cook's Kitchen, Wheal Tryphena, and other mines, and principal mining agent to E. W. W. Pendarves, Esq., M.P., the full confirmation of the satisfactory views of this property, as taken by Mr. Daniell:

North Roskear, May 22.—I have fully considered Mr. Daniell's report of the Camborne Consols Mines, and, in reference to the prospects of the concern, I fully agree with him, and to a certain extent also as to the future plan of working. There can be but little doubt that a large quantity of metalliferous mineral will be found in the sett, as almost every lode in the district that has been fully developed has proved rich in ore. But, in my opinion, the most economical plan of opening the mines would be to drive the levels west on the various lodes from the different cross-cuts driven north and south from Martin's shaft, by which mode of working you would cut the mine open to about 80 fms. from the surface, at which level and above the lodes that traverse your sett have been very rich in Dolcoath; but if your wish be to gain time, I consider that Mr. Daniell's plan (to erect an engine and to continue sinking Tyndale's shaft) would enable you to give a trial to the point about Tyndale's shaft two years earlier, and this part of the sett, from the contiguity and intersections of the lodes taking place in it, certainly presents exceedingly favourable features. A rotary engine might be erected of a proper size to serve the purpose of winding and crushing the ores, in the event of a larger engine being wanted at some future time.—Joseph Vivian.

After an animated discussion upon the satisfactory nature of the reports referred to, the shareholders requested the directors to take the necessary steps forthwith for purchasing an engine, and to provide funds for paying off the present liabilities, as well as for the more effectual working of the mines.

The proceedings throughout were of the most amicable character, and thanks having been voted to the chairman the meeting seperated, much gratified with the prospects of seeing this valuable property placed upon an energetic scale of working, and not doubting the very profitable results to the proprietary from the immediate adoption of such a course.

It was also stated that, since Mr. Daniell's report, a piece of ground referred to in it, which would greatly facilitate the progress of this company, and save the cost of sinking Tyndale's shaft, had been conceded by the Stray Park Company, and that Lady Basset had consented to execute a lease thereof to the Camborne Consols Company.

CRAIG DDU SLATE COMPANY.

The annual general meeting of shareholders was held at the offices, Parliament-street, on Thursday last.—John Morgan, Esq., in the chair.

Mr. Henry Smith (the secretary) read the following report of the directors:

It will be seen by the account rendered, that a large sum has been expended during the past year, and chiefly in extending the quarry, as the directors deemed it best to enlarge the workings, rather than to aim at present profits: had they taken the latter course, they could have shown a more flattering account of sales, but they preferred to postpone remuneration to the shareholders, believing that, by the plan pursued, the advantages of the company would be considerably enhanced. The sink has been vigorously worked, and proved very productive. The north bargain has now come into profitable working, and during the current year very considerable quantities of slate will be raised from it. The deep cutting towards the south side is nearly completed, and will prove most effective in opening the east and south sides of the quarry. A tramway, 543 feet long, from the south side has been laid, ready for working the south top, on the second floor. Another line of tramway, 650 ft. in length, has been excavated and laid down on the side of the mountain, to clear the east top, on the third floor; this is a portion of the work of great importance, inasmuch as a very large bed of the best metal underlies this working. The directors have been, perhaps, too reluctant to make calls, as they wished to avoid pressing on their constituents during a trying period; but they hope the improvement in the commercial world will tell on the affairs of this company, and that means will be furnished to develope the ample resources of the quarry.

The report having been adopted, Mr. Chase was re-elected, and Sir Edward Belcher and Mr. Lewis Grave elected directors.—The present auditors, Mr. D. Thomas Lownds and Mr. Veitch Peploe, were re-elected for the year ensuing.

A lengthened conversation ensued, and the meeting separated much gratified with the improved state of the quarry.

EXMOOR WHEAL ELIZA MINING COMPANY.

A general meeting of shareholders was held at South Molton, on Tuesday the 28th May, R. Pedler, Esq., in the chair.

The accounts presented showed the liabilities, 317*l.* 4*s.* 2*d.*, and the list of arrears. 170*l.* 10*s.* A call of 20*s.* per share was made.

The following report, from Capt. Richard Moore, was read:—

May 28.—In handing you my report of the above mine, I beg to say that the resolutions of the meeting held at Plymouth, in February last, have been strictly attended to—namely, the engine-wheel raised new launders and stands, for the purpose of giving greater power to the wheel; the sweep-rods, joints of the flat-rods, bobs, straps, brasses, and connexions, together with the bucket-rods, have undergone complete repairs. A new capstan and shears have been erected. I now intend to change the 13-in. tye-lift, and replace it with a 15-in., put the present tye-lift for the rise, and sink with the 10-in. What is proposed will take about a week to accomplish, when the machinery will be in such a state that breakage will be of rare occurrence, and the men follow their labour without hindrance. The south cross-cut has been driven about 2 fms. 3 ft. We intersected the south lode, and found it about 2 ft. wide; the underlay south, about 2 ft. in the fathom, composed of white iron, mundic, spar, and a little copper; the appearance of the lode is just the same as seen in the 12 fm. level. I would strongly recommend this level to be driven west on the course of the lode, 3 or 4 fms., to get through the iron, where we may expect to meet the sheet of copper seen at the 12, going down over the iron. The end going east on the north lode has been driven about 2 fms. through a very pretty lode, from 1 to 2 ft. wide, composed of solid mundic, universally mineralised and producing some beautiful spots of yellow copper; one part of this lode is left standing north, as stated in my last report. What was supposed by the late agent to be a cross-course, turns out to be a branch from the north wall, running in an easterly direction, and quite in a solid state, being free from gossan. I should wish, when convenient, to see the lode laid open so far east as the slide seen in the shallow adit, as I think, when the end gets through the mundic, a great change for the better will take place; every indication is favourable to a course of copper going down under the mundic. The plat in the 24 fm. level, together with a penthouse is completed, and the shaft commenced sinking by nine men. I hope, in five months from this date, we shall be down to the 34 fm. level. I consider, when the work before mentioned is arranged, it will be sufficiently strong for the powers of the engine, and have not the least doubt, when the lift is sunk, and the lode thrown open, judging from appearances in the 24 fm. level, and the generally mineralised state of the ground, that some fine courses of copper may be expected.

KESWICK MINING COMPANY.

The two-monthly general meeting of shareholders was held at the offices, George-yard, Lombard-street, on Monday, the 27th May, when a statement of accounts for the past two months was laid before the meeting. Some additional power being wanted at the mines, one of them having been retarded for some weeks owing to the want of water to work the wheel, it was resolved that a competent person be sent to inspect the mines, previous to the application of further power, and that it be left with the directors to adopt such measures as may be considered necessary.—The following is the agent's report:—

At Brandley, the ore in the 10 fm. level north (rise) continues good in places. In the 10 fm. level south we have made a trial upon a piece of ore going down, but do not consider it worth prosecuting. The 20 fm. level north continues to look very promising, and in places we have good ore. The 20 fm. level south promises remarkably well, but has not yet borne ore of any consequence. The 25 fm. sump has good ore going down, but this place has been discontinued, owing to our having commenced sinking the engine-shaft. We have had the salt sump cleared out, and find good ore going down, but the

ground is so hard and wet, that it is thought best not to work it by sinking, but to get at it by rising from the 20 fm. level north, if the pipe of ore should go down. In another sump, in the Salt level, we have a tribute pitch. In concluding the report of this mine, I cannot too strongly urge you to come to some conclusion respecting an increase of power, for it is impossible, with our present supply of top water, to work the mine effectually; and in proof of that I have only to mention that for the last three weeks the most promising parts of the mine have been submerged, and even if we have rainy weather immediately, it will take a full week to get the mine into operation again. At Thornethwaite the 17 fm. level has been driven, but we have not yet met with ore. The sump on vein, in that level, has been stopped till the branch of ore going down has been cut in the 27 fathom level, as the water is too strong for further sinking, and the work requires too much hand labour to draw. The sump on the string continues good ore, and in places we have it 8 inches wide. We have also made a cross-cut through the vein in this level, and have met with a little ore. The bottom level, 27 fms., is being driven by six men, and continues a good looking vein, though still hard and wet.

LAMHEROOE WHEAL MARIA MINING COMPANY.

A numerously-attended general meeting of adventurers was held at the offices, King-street, Cheapside, on 30th May,

PETER DAVEY, Esq., in the chair.

The purser's circular convening the meeting, and his authority to the secretary to act as his proxy thereat, having been read, the previous minutes were confirmed. The balance-sheet was presented, showing the following results:—Labour cost to end of May, 18,107*l.* 12s. 8d.—By calls, 18,061*l.* 19s. 2d.: showing balance against the mine, 45*l.* 13s. 6d. The liabilities were 461*l.* 3s. 5d.; and assets, 415*l.* 9s. 11d.

A very lengthened discussion ensued upon the question of the value of the tin lode in the 60 fm. level at the engine-shaft, and a series of assays were compared, assisted by explanations from Mr. A. Murray, jun., the superintendent, the result of which was entirely in favour of the lode being a valuable one for tin, especially in reference to its improvement both in size and quality, and now valued by Mr. Murray, at 50*l.* per fm., who also reported that there was at surface 10 tons of ore, and from 50 to 60 tons broken from the lode, and that active means were being taken by the agent to dress this ore and send it to market. In reference to calls in arrear, it was resolved—"That all shares upon which the call, due 20th April last, remains unpaid on Saturday, 8th June next, will become absolutely forfeited, and that the purser be instructed to give immediate notice to each shareholder in arrear accordingly."

A call of 10s. per share (being the second instalment of the call of 2*l.* per share, made 27th Dec., 1849) was made, payable on or before the 20th June next. Thanks were voted to the chairman and the meeting separated, highly pleased with the prospects of their adventure.

OLD BRIMPTS TIN MINING COMPANY.

At a meeting of adventurers, held at the mine, on the 23d May, a report was read, which stated an important discovery had been made in the lode west of the plantation in the Potato Field. About 10 ft. from surface, the lode was found carrying tin throughout; and there appeared every reason to believe it would produce abundance of tin in the shallow adit, commenced at the bottom of the plantation. At the head of the plantation, they had sunk on the lode 5 fms., which they found tinny throughout. In clearing the engine-shaft, a good bunch of tin had been discovered. It is expected that, by the next general meeting, they will have cleared up the mine, and show an abundance of tin. An experienced miner (Capt. George) who inspected the mine by desire of several gentlemen, confirms the promising appearance, and stated that he broke as fine stones of tin as ever he saw, and is confident it is an undertaking of first-rate speculation. Resolutions were passed for carrying on the future operations of the mine; and the parties present were highly gratified with the prospects before them.

[From the *Plymouth Journal.*]

ASHBURTON UNITED MINES.—But few men are now employed here. The new shares are nearly allotted, and upon their being taken up a steam-engine of 60-inch cylinder will be erected, so as to give sufficient power to sink after the shoots of tin ore that are beneath the present levels.

SOUTH PLAIN WOOD.—Notices of tender have been issued for cutting the new leat, and for the erection of a water-wheel and machinery. The enquiries for shares in this mine have been numerous during the week; but small business has been done in them, from the reluctance of present holders to sell.

WREY CONSOLS.—A company is in course of formation for prosecuting this adventure. Several eminent agents have been lately inspecting the property, and among them Professor Murray; their reports will, we hear, be shortly before the public. Its peculiar indications and capabilities will place it as one of the best speculations on this side Dartmoor, and the inspection of this sett by practical miners is, we are authorised to state, eagerly desired by the proprietors.

KIT HILL.—A valuable discovery has been made in this mine. Within the last few days a second lode has been cut in the 53 fm. adit, a few fathoms under the surface, which is 6 ft. big, and will yield 4 cwts. of tin to the 112-gallon sacks, or 10 cwts. of tin to the fathom of lode.

WAYE ALSTON MINE.—The costeanings have been satisfactory, and orders have been given for at once cutting a shallow adit to intersect the lodes north of the slide, and which will, at the point of intersection with the first lode, give about 12 fms. backs. A continuation of the present deep adit level would give about 60 fms. backs. We trust the endeavours of this small, but spirited, body of adventurers will be crowned with success.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

DISCOVERY OF VALUABLE SILVER-LEAD MINES IN THE NEIGHBOURHOOD OF BRISTOL.—We hear that very valuable silver-lead ore has been discovered at Itchington Hill in abundance, and that assays have been made, the ore yielding the extraordinary quantity of 70 ozs. of silver to the ton. This will be a great boon to the surrounding agricultural neighbourhood, as there is every probability of its being carried on by a spirited London company.

NEW COPPER MINE IN IRELAND.—It is stated that a very valuable copper mine has just been discovered on the property of Mr. Harrold, near Limerick.

ALFRED CONSOLS.—A new lode was discovered a short time since at this mine, in the 60 fathom level from the adit, and it has been cut lately in the 70 fm. level, where it so rich and productive that it is supposed to be worth 100*l.* a lineal fathom. The mine will now give a dividend to the adventurers, and, according to the present appearances of the mine, they will speedily be doubly repaid for their spirited outlay.

PROVIDENCE MINES.—At the quarterly account of these now flourishing mines, held on the 22d May, after the usual business, the purser (Mr. Higgs) presented Capt. Thomas Sanders, R.N. (who for 15 years has performed the duties of comptroller of these mines), with a very handsome candelabra and epergne. In the course of his address, Mr. Higgs observed, that soon after the mines were opened in 1832, a change for the worse took place, and but for the perseverance and encouragement of Capt. Sanders must have been given up; he, however, still hoped and worked on, and the dividend that day was a cheering proof of the success which ever attends perseverance. The cost of the plate was defrayed by subscription among the adventurers.

SIDNEY GODOLPHIN MINE, BREAGE.—A meeting of about 30 adventurers, who had made arrangements for working Sidney Cove sett, met on the grounds yesterday week, to arrange all preliminary matters. Mr. Pike, of Camborne, was voted to the chair; and it was resolved to call the mine Sidney Godolphin, to be divided into 1024 shares—800 of which were subscribed for, when the share-list was declared to be complete. Mr. F. Hill was appointed purser, and Capts. J. Vivian and M. W. Martin agents. The business was closed by a good dinner, provided by the Angel Hotel, Helston; and the poor who surrounded the tent were plentifully regaled.

WHEAL BLACK POOL COPPER MINE.—On Whit-Monday a large party assembled to witness the christening of this mine. After a bottle of bright champagne had been cast against the shaft by Miss S. A. Sawdye, about 60 persons dined together under a marquee erected close to the mine. Songs, glees, and toasts were given—the valley re-echoed sweet sounds by the side of the lovely woodland scenes of the river Dart—and the merry dance, and loud and continuous cheering for the success of the mine, terminated the proceedings. This mine is about a mile below South Plain Wood, and appears most promising. —*Plymouth Journal.*

BRITON-FERRY DOCKS.—It is reported, that, at a meeting held last week, in London, over which Mr. Talbot, M.P., presided, and which Lord Villiers, Mr. Vivian, M.P., Mr. H. Vivian, and Mr. Brunel attended, the South Wales Railway Company came to an arrangement to advance 20,000*L.* and the Vale of Neath 10,000*l.* towards the construction of docks at Briton-Ferry.—*Cambrian.*

MINING APPOINTMENTS DURING JUNE.

1. Pay-day at Tresavean, Trethellan, Grambler, West Wheal Jewel, Wheal Mary, South Frances, North Roskear, Condurrow, and Devon Consols—Par Consols pay and setting.
3. Fowey Consols sampling.
4. South Basset account, on the mine.
5. Devon Consols and other mines sampling.
6. Ticketing at Camborne—Wheal Seton, Tincroft, North Pool, and other mines.
7. Pay-day at South Basset, West Caradon, and Gonamena.
8. Pay-day at Par Consols, Dolcoath, and Stray Park.
10. Wheal Seton account, on the mine—Par Consols sampling.
12. United South Caradon and other mines sampling—Wheal Mary account on the mine
13. Ticketing at Redruth—Carn Brea and other mines.
14. Stray Park account—North Pool setting.
15. Fowey Consols setting and pay.
17. Condurrow account on the mine—Fowey Consols sampling.
18. East Pool and Fowey Consols account, on the mine.
19. North Roskear and other mines sampling.
20. Ticketing at Redruth—Devon Consols and other mines.
21. Bednick pay—Levant tutwork pay.
22. Pay day at Wheal Seton, Treviskey, Fowey Consols, Agar, Great Consols, United, Comfort, and West Buller.
24. Par Consols sampling.
26. Carn Brea and other mines sampling.
27. Ticketing at Truro—United, South Caradon, and other mines.
28. Pay day at North Pool.—Tincroft, East Crofty setting.

THE ORIGINAL "DAVY" SAFETY-LAMP.—At the *soirée* of the President of the Royal Society, the original model of Sir Humphry Davy's Safety-Lamp, recently presented to the society, was exhibited, and attracted much attention: the following particulars were furnished by Mr. Weld:—The Royal Society's collection of scientific and mechanical instruments has received a very interesting addition, by the presentation from Joseph Hodgson, Esq., F.R.S., of the original model of Sir Humphry Davy's safety-lamp. In November, 1815, Sir Humphry read a paper before the Royal Society "On the Fire-damp of Coal Mines, and on Methods of Lighting the Mines, so as to prevent its Explosion." In this communication he described a safe light, "which became *extinguished* when introduced into very explosive mixtures of fire-damp;" but as this fell short of the philosopher's wishes, he instituted a fresh series of experiments, which resulted in his invention of the safety-lamp, described in a paper read before the society in January, 1816. "The invention (he says) consists in covering or surrounding the flame of a lamp, or candle, by a wire sieve." And he adds—"When a lighted lamp, or candle, screwed into a ring, soldered to a cylinder of wire gauze, having no apertures except those of the gauze, is introduced into the most explosive mixture of carburetted hydrogen and air, the cylinder becomes filled with a bright flame, and this flame continues to burn as long as the mixture is explosive." The model in the possession of the Royal Society answers in every respect to this description, and to the representation of the lamp which accompanies the paper. It was made by Sir Humphry's own hands, and given by him to Dr. Lee, now Lord Bishop of Manchester, whose father was assistant secretary to the Royal Society at the time of Davy's presidency. The excessive simplicity of the contrivance is most remarkable; but this is one of the greatest advantages which attended the invention. As the author remarks in the paper just quoted—"All that the miner requires to insure security are small wire cages to surround his candle, or amp, which may be made for a few pence, and of which various modifications may be adopted; and the application of this discovery will not only preserve him from the fire-damp, but enable him to apply it to use, and to destroy it, at the same time that it gives him a useful light." A month after the invention, Sir Humphry informed the society that his cylinder lamps had been used in two of the most dangerous mines near Newcastle with perfect success.

BRONZE ARTICLES.—Importations of bronzes from the continent have been for some time past beyond all former precedent in extent and variety, which is amply shown by the large quantities of such articles at present exhibited in the shops of the metropolis and elsewhere. As may be conjectured, they vary much in value, according to the nature and description of each particular article; but they appear to include all descriptions, from articles which may be termed copies, or illustrative works, of the very highest rank of art to bronzes of the simplest nature for domestic or table use, presenting altogether a variety of articles of bronze manufactures before unknown in this country. With regard to the duty leviable on these articles on importation, it appears to be a standard principle that, if they be articles which can be converted to any purpose for table or domestic use, they must be considered liable to duty as bronze manufactures, whereas, on the other hand, if they be not capable of being appropriated to any such purposes, but are really works of art, in the acknowledged and strict sense of the term, they are admissible duty free.

SULPHUR—(*From a Correspondent*).—The King of Naples has, we are informed, authorised the burning of sulphur in Sicily throughout the year. Pyrites from Cornwall and Ireland is, however, increasing in consumption, and must continue to do so, unless the price of brimstone be brought more within the reach of our manufacturers.

MINING IN SPAIN.—During the past week there has been remitted to the capital 42 arrobas (exceeding 10 cwts.) of silver from the mine of La Cecilia, in the province of Guadalajara.—*El Clamor Publico*, May 18.—[We are given to understand the shares in this mine, which are limited to 100 in number, sell at upwards of 2000*l.* each.]

SLATE QUARRIES—In the House of Commons, last night, Mr. Hume presented a petition from Mr. Owen Roberts, of Castle-hill, Carnarvonshire, complaining of grievances caused by the Commissioners of the Woods and Forests in relation to certain slate quarries in that county, which ought to belong to the public, and which had been improperly leased by the Commissioners of Woods and Forests. The hon. Member moved that the petition be printed, and gave notice that when it was brought up he should call the attention of the House to the subject.

A deputation from the Staffordshire iron masters, including Mr. Thornley, Mr. Barker, Mr. Williams, Mr. Mathews, Mr. Dimmach, and Mr. Smith, have had an interview with the Commissioners of Railways, at their office in the Board of Trade. The deputation was accompanied by Lord Hatherton, Lord Lewisham, Hon. C. P. Villiers, and the Hon. E. R. Littleton.

RAILWAY CALLS FOR JUNE.—The amount falling due during the month, so far as yet advertised, is 710,416*l.*—nearly the same as in June last year, when it was 778,772*l.* For the first six months of the present year, the calls have been 6,362,063*l.* against 11,289,782*l.* in the corresponding half of 1849. The total for the last year was 19,673,694*l.* against 33,260,249*l.* in 1848, and 42,071,893*l.* in 1847.

LONDON AND NORTH-WESTERN—ENORMOUS INCREASE OF TRAFFIC.—The traffic of this great system of railways steadily increases. The receipts for the week ending the 26th inst. were 30754. in excess of those for the corresponding period of last year. The receipts since the commencement of the year exceed by 56,840*l.* those of the corresponding period of 1849—viz., by 2700*l.* per week, or at the rate of 140,000*l.* per annum.

OXFORD, WORCESTER, AND WOLVERHAMPTON.—On Thursday, in committee, the preamble of this company's Bill, giving them power to allot preference dividends to certain shares, and giving power to the Shrewsbury and Birmingham, Shrewsbury and Chester, and South Staffordshire Railways, to subscribe no more in the aggregate at one time than 500,000*l.* towards the undertaking, was declared proved.

THE BRITANNIA-BRIDGE.—The operation of turning the third tube round by a semicircular sweep over the water on its four pontoons, assisted by large cable-chains, and a huge upright beam attached to the shore, which formed the fulcrum or centre of motion on which it was swayed round, has taken place with success under the superintendence of Mr. Stephenson, M.P., Capt. Claxton, E. Clarke, L. Clarke, Poole, Clalton, and Tresivton, who were seated upon the tube. Its journey to the bearing point, whence it will have to be floated to the foot of the piers on the 10th June, occupied about 40 minutes, the distance traversed being about equal to its own length.

CURIOUS MODEL MACHINERY.—A coppersmith, named Erskine, living at Alloa, Scotland, has made for the Great Exhibition a working model of a locomotive steam-engine, most beautifully constructed of sterling silver. It is so small that it might be put with ease into an ordinary pocket, and yet it is not only perfectly capable of working, but Mr. Erskine has adapted to it no fewer than six improvements of his own invention, some of which appear to us to be of very great importance, and will, no doubt, ere long be introduced in the construction of the ordinary locomotives. One of these improvements consists of a new steam cock, of exceedingly simple construction. Another is a simple contrivance to enable the driver, by touching a spring with his foot, to unfasten the tender from the engine at pleasure, so that in cases of accident the engine can be separated from the train in an instant. The third improvement is more in the way of ornamenting the engine than in adding to its safety or utility. It consists in substituting for the ordinary steam dome an elegant one in the shape of a regal crown, which certainly goes far to give a handsome appearance to the locomotive. The fourth appears to us to be a very important, as well as a beautiful contrivance. Instead of the machinery at present used for driving, reversing, and stopping the engine, Mr. Erskine has introduced in his model a single lever handle, which alone, according as it is pulled to either extremity of its confinement, or kept in the centre, answers all the three purposes of driving, reversing, and stopping the engine. The two remaining inventions have been made public by Mr. Erskine, we believe, before. They consist of an index valve, exhibiting the pressure on the boiler in the pounds to the square inch, and a pendulum movement under the boiler for regulating the supply of steam to the cylinder.

THE STEEL TRADE.

We have received the usual monthly report on the state of this trade from Messrs. Blake and Parkin, of the Meadow Steel-Works, Sheffield, of which a rather unfavourable view is taken of that portion of it relating to the manufacture of goods for the home market. From various sources of information, it is confidently stated that in the agricultural districts the trade is nearly annihilated, and it is feared a continuance will react on the manufacturing interests. As a natural consequence, prices have a downward tendency, and without some improvement, manufacturers supplying this market will be subject to great risk before the close of the year. This depression is attributable to the German Customs' League, who charge from 75 to 200 per cent. on Engl.h steel manufactured goods; while they obtain our steel at a low rate of duty, and are importing into this country articles of hardware of elaborate finish, at much lower rates than ours. It is generally strongly recommended that every effort be used by manufacturers and dealers to meet the requirements of present circumstances, by adopting means to conduct business the most direct and wholesale manner. The demand for Sheffield goods for export continues fair, especially steel, although prices rule low; and as the political differences on the continent are gradually abating, an average trade in that market may be reckoned on. The demand for goods for the United States is great.

BICKFORD'S PATENT SAFETY FUSE.—The Patentees of the ORIGINAL, and only real, SAFETY FUSE, beg to inform Merchants, Mine Agents, Railway Contractors, and all persons concerned in Blasting Operations, that, for the purpose of protecting the public in the use of a genuine article, the PATENT SAFETY FUSE *has now a thread wrought into its centre*, which being patent right, infallibly *distinguishes it from all imitations*, and ensures the continuity of the gunpowder. The Safety Fuse is now protected by a Second Patent, and manufactured by greatly improved machinery.

BICKFORD, SMITH, & DAVEY, Camborne, Cornwall.

IMPROVED WIRE ROPE.—The UNDERSIGNED, in tendering their best thanks for the liberal support they have hitherto received, respectfully solicit attention to the vast IMPROVEMENTS which new machinery and attention has enabled them to effect in the MANUFACTURE of ANDREW SMITH'S PATENT WIRE ROPE, more particularly his FLAT ROPE, which they can now produce of a description far superior to any previously offered to the public.

WILKINS & WEATHERLY.

Patent Wire Rope Works, 39, High-street, Wapping, London.

PRICES OF MATERIALS,

As charged at LELANT CONSOLS *during the quarter ending March last:—*

Articles.	*Prices paid.*
Candles	5s. per dozen.
Powder	38s. per cwt.
Fuze	4d. per coil.
Hilts	1s. 6d. per dozen.
Shovels	26s. per cwt.
Cans	5s. per dozen.
Locks	6s. per dozen.
Axes	About 2s. each.
Nails	16s. per cwt.
Iron	7s. per cwt.
Oil	4s. per gallon.
Tallow	41s. per cwt.
Timber	10½d. per foot.
Engine shag	5d. per yard.
Blistered steel	45s. per cwt.
Gad steel	26s. per cwt.
Coal	11s. per ton.

CORNISH STEAM-ENGINES.

[Abstract from Browne's *Cornish Engine Reporter*, from April 20 to May 20.]

PUMPING-ENGINES.	
Number reported	28
Average load per square inch on the piston, in lbs.	13·4
Average number of strokes per minute	5·5
Gallons of water drawn per minute	5913
Average duty of 20 engines—being million lbs. lifted 1 foot high, by the consumption of 1 cwt. of coals	64·8
Actual horse-power employed per minute	1166·2
Average consumption of coals per horse-power per hour, in lbs.	4·1
ROTARY-ENGINES—WHIMS.	
Number reported	26
Number of kibbles drawn	76,568
Average depth of drawing, in fathoms	133·2
Average number of horse-whim kibbles drawn the average depth, by consuming 1 cwt. of coals	53·5
Average duty of 14 engines, as above	18·1
STAMPS.	
Number reported	7
Average number of strokes per minute	12·3
Average duty of 6 engines, as above	39·4
Actual horse-power employed per minute	182·1
PUMPING-ENGINES DOING HIGHEST DUTY.	
Par Consols ..... 80-inch single ..... *Millions*	102·4
Fowey Consols ..... 80-inch single	98·3
Great Polgooth ..... 80-inch single	82·0
West Fowey Consols ..... 60-inch single	81·2
Trelawny ..... 50-inch single	76·6
Stray Park ..... 60-inch single	75·6
North Pool ..... 50-inch single	72·5
Great Polgooth ..... 67-inch single	70·0
WHIM-ENGINES.	
Fowey Consols ..... 22-inch double ..... *Millions*	29·3
ditto ..... 22-inch double	27·3
Par Consols ..... 24 & 13-inch Sims's combined	26·8
Great Polgooth ..... 22-inch double	20·1
Devon Great Consols ..... 30 and 16-inch Sims's combined	19·4
Great Polgooth ..... 22-inch double	19·3
STAMPING-ENGINES.	
Great Polgooth ..... 35-inch double ..... *Millions*	57·5
Tamar ..... 30-inch single	48·0
South Caradon ..... 26-inch single	41·8

RAILWAY TRAFFIC RETURNS.

Names of Railways.	*Length.* 1850	1849	Present actual cost.	Price p. share	Last Div.	*Traffic Returns.* 1850	1849
Aberdeen	72	16	1,000,547	7⅜	—	£1103	£540
Belfast and Ballymena	37¾	37¾	491,159	18½	5	580	512
Birkenhead, Lancashire, & Chesh.	15	15	960,653	18⅝	5	1314	856
Bolton, Blackburn, & West Yorksh.	14	14	968,112	5½	—	453	434
Bristol and Exeter	84¼	75½	2,924,661	63	3½	4530	4575
Caledonian	160	141	5,149,320	9⅝	3	6330	5455
Chester and Holyhead	94½	81	3,581,587	7	4	3029	1307
Dublin and Belfast	22	—	——	10½	—	239	241
Dublin and Drogheda	53	35½	778,565	28	—	884	782
Dublin and Kingstown	7¾	7¾	349,736	—	6	769	1229
Dundee, Perth, & Aberdeen June.	47½	47½	179,775	4	3	577	545
East Anglian (Lynn to Ely)	67¾	67	1,308,194	13 ¼	—	743	724
East Lancashire	75½	75½	3,192,789	7⅝	5	4857	2869
Eastern Counties and Norfolk	322	322	13,139,156	7⅛ ⅜	—	17098	15866
Eastern Union	95	50½	1,782,7 2	3	—	2478	1220
Edinburgh and Glasgow	89½	68½	2,644,378	26 ¼	4	3895	4068
Edinburgh and Northern	70	70	2,024,082	5½ ¼	2	2562	2314
Glasgow, Paisley, and Ayr	102½	74	1,996,201	43½ 44	3	3285	3011
Glasgow, Paisley, & Greenock	23	23	866,074	10½	2½	1077	995
Gt. Northern & East Lincolnshire	143	110	5,406,157	9¼ 10	5	3654	2282
Gt. Southern & Western, Ireland	188½	110½	3,899,228	30½	6†	4313	3529
Great Western	230½	206½	13,189,565	56 57½	4	17207	17783
Lancaster and Carlisle	90	90	1,476,808	50	4	3750	2161
Lancashire and Yorkshire	224	196⅝	10,818,478	39 40	3	19128	11735
London and North Western	478½	463½	25,286,876	106 105	5	47617	44542
London and Blackwall	5⅜	4	1,363,529	4½	1-12	1076	968
London, Brighton, & South Coast	171½	162½	7,103,102	83	4½	12118	12752
London and South-Western	242	194	7,490,688	63	3½	11774	11383
Londonderry and Enniskillen	14½	14½	171,026	16	—	168	160
Manchester, Sheffield, & Lincolnsh.	160½	94½	2,078,135	15	5	7680	3640
Midland Company	492½	463½	14,042,340	37	5½†	24604	22168
Midland Great Western (Irish)	50	36½	362,978	23 ½	4†	1389	1154
Monklands	36	—	486,245	—	6	—	798
North British	135	110	2,806,747	7⅞ ⅛	3	3403	3010
Scottish Central	45½	45½	1,448,969	12⅝	5	1442	1347
Scottish Midland Junction	34½	32	571,877	7⅞	—	469	—
Shrewsbury and Chester	48	48	1,161,840	7⅞ ⅛	⅛	1612	1363
Shropshire Union	30	—	—	2⅛	—	467	—
South Devon	87⅛	87⅛	1,951,933	8⅛	5	1919	1739
South-Eastern	234	165½	8,116,914	14⅛	3⅛	13786	8068
Taff Vale	38	38	907,398	—	6½	2596	2164
Ulster	36	36	675,000	45⅛	—	—	742
West Cornwall	13	13	209,286	—	—	282	231
Whitehaven Junction	12	12	171,962	9⅛	1	203	191
York, Newcastle, & Berwick	290½	269	5,251,999	14½	2⅛	15050	12907
York and North Midland	260	260	4,875,582	17½	—	7516	7209

FLUCTUATIONS IN STOCKS AND SHARES.

DURING THE MONTH OF MAY.

Stocks and Shares.	Share.	Paid.	Pr. May 1.	Highest.	Lowest.	May 31
Consols	—	—	95⅞	96½	95	96⅞
Exchequer Bills	—	—	68s pm.	71s pm.	67s pm.	70s pm.
RAILWAYS.						
Brighton	Stock	£100	£78½	£83	£78½	£83
Caledonian	50	50	7½	9⅜	7⅜	9⅜
Eastern Counties	20	20	7¼	7⅜	7	7⅛
Great Northern	25	24	7⅜	10	7⅜	10
Great Western	100	100	51	58½	50⅝	58½
London and North-Western	Stock	100	101¼	106½	101	106½
Midland	Stock	100	32	37	31⅝	37
North Staffordshire	20	17½	7½	7⅝	7	7⅜
South-Eastern	£33 2 4	33 2 4	13¾	14⅝	13	14⅛
South-Western	Stock	100	58½	63½	58	63½
York, Newcastle, & Berwick	Stock	25	11¼	14⅜	11⅛	14⅛
York and North Midland	50	50	14⅛	17½	14⅜	17½
Boulogne and Amiens	20	20	6¼	6⅜	5⅜	6¼
Northern of France	20	16	12½	13⅝	11½	13⅜
East Indian	20	7	7¼	7⅜	7¼	7⅜

The tendency of Consols has been steadily towards an advance; and the temporary reactions experienced have been solely from political causes. During the month, a rise has been established of three-quarters per cent. In shares, especially within the last few days, there has been a general advance; and they have now recovered to about the point at which they stood two months back. The Eastern Counties is the only line that has not participated in the improvement.—*Times.*

ELECTRIC TELEGRAPH ACCIDENT.—In the telegraph office, at the Stoke station, during the storm, last week, a loud explosion was heard, and smoke seen issuing from the instrument connected with the Derby line. Instantaneously the whole apartment seemed to be filled with flame, and a sulphurous smell was perceived. On examination, it was discovered that there had been a fusion of the wires of two of the lightning-conductors used under the instruments, to prevent the demagnetising of the needles through meteorological changes, and to transmit to the earth the superfluous electricity.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 8 per Cent., 207½ 7
3 per Cent. Reduced Ann., 95¼ ¼
3 per Cent. Consols Ann., 95¼ ¼ ⅜
3½ per Cent. Ann., 97¼ ⅜ 7 ½
Long Annuities, 8⅛
India Stock, 10¾ per Cent., 267½ 8
3-per Cent. Con. for 12th June 96¼ ⅜ ½
Exchequ. Bills, 1000*l.*, 1½d. 68s 71 pm.

Belgian, 4½ per Cent., 86⅝
Dutch, 2½ per Cent., 57 6⅞
Brazilian, 5 per Cent., 88 7½
Chilian, 6 per Cent., —
Mexican 5 per Cent., ex Coup., 31 30⅝
Russian, 5 per Cent., 106⅝
Spanish, 5 per Cent, 17½ ⅝ ⅝
Ditto 3 per Cent., 37⅝

MINES.—The share market during the week has continued much the same as for some weeks past, notwithstanding which, however, there is every appearance of an early improvement. From our letters, the mines generally are represented as looking remarkably well.

Devon Great Consols and South Frances shares have been in request, the latter at an advance. Condurrow, Mary Ann, Treleigh, and a few others, have also been sought for.

The United Mines have this week declared a dividend of 1000*l.*, being 5*l.* per share; and yesterday a dividend of 20*l.* per share was declared by the Lisburne Mines, both payable at the office of Messrs. John Taylor and Son.

At Wheal Margaret meeting, held at Halsetown, on Tuesday last, the accounts for three months, ending March, were presented, showing—By tin sold, 3453*l.* 11s. 11d.; balance in favour last account, 102*l.* 11s. 2d. = 3556*l.* 3s. 1d. —To labour cost and carriage, 1997*l.* 17s. 3d.; coals, 113*l.* 11s. 10d.; merchants' bills and lord's dues, 640*l.* 15s. 11d.; dividend declared, 6*l.* per share, 672*l.*—leaving balance in purser's hands, 131*l.* 18s. 1d.

At Boscaswell Downs meeting, the accounts for three months, ending 31st March, were presented, showing—Labour cost and carriage, 1301*l.* 4s. 1d.; coals and merchants' bills, 389*l.* 12s. 10d.; balance against adventurers last account, 439*l.* 5s. 5d.= 2130*l.* 2s. 4d.—Tin sold (less dues), 1269*l.* 5s. 5d.; loss upon the quarter, 421*l.* 11s. 6d.—leaving balance against adventurers, 860*l.* 16s. 11d. The mine, it is said, is now looking much more favourable.

At St. Ives Consols meeting, the accounts for January, February, and March were presented, showing—By black tin sold, 3357*l.* 11s.; copper ores, 56*l.* 5s. 9d.; balance of last account, 158*l.* 14s. 5d.= 3572*l.* 11s. 2d.—To labour cost and carriage, 2406*l.* 17s. 6d.; coals, 253*l.* 12s. 8d.; merchants' bills, &c., 589*l.* 9s. 9d.—showing present balance in favour of mine, 322*l.* 11s. 8d.

For Wheal Reeth adventurers a statement of accounts for Jan. and Feb. has been made, showing—Call of 5*l.* per share, 600*l.*; tin sold, 2631*l.* 15s. 7d.; lords' and bounders' dues given up, 65*l.* 2s. 2d.; sundries, 7s. 6d.=3297*l.* 5s. 3d. —Balance against adventurers last account, 408*l.* 8s. 9d.; cost and wages, Jan. and Feb., 1396*l.* 3s. 3d.; merchants' bills, 246*l.* 10s. 10d.; sundries, 119*l.* 7s. 9d.; call repaid, 600*l.*—showing balance in favour of adventurers. 526*l.* 14s. 8d.

At the Boswidden and Wheal Castle meeting, held at the Union Hotel, Penzance, the accounts for Jan., Feb., and March were presented, showing—Balance of last account, 55*l.* 11s. 1d.; tin sold end of quarter, 653*l.* 9s. 3d.; sundries, 19*l.* 4s. 1d.=728*l.* 4s. 5d.—Costs for Jan., Feb., and March, 492*l.* 15s. 5d.; doctor, 4*l.* 6s.; purser, three months, 9*l.* 9s.; merchants' bills, 112*l.* 18s. 5d.; tin dues, after deducting returning charges, 22*l.* 13s. 6d.—showing balance in favour of adventurers, 79*l.* 2s. 1d.

At the Bollowall and Nanpean meeting, held at the Three Tuns Hotel, Penzance, the accounts for the three months ended March were presented, showing—Labour cost, 220*l.* 4s. 4d.; lord's dues, 6*l.* 9s. 9d.; merchants' bills, &c., 114*l.* 3s.; balance against adventurers last account, 57*l.* 19s.=914*l.* 16s. 1s.—Tin sold, &c., 205*l.* 15s. 6d.—showing balance against adventurers, 709*l.* 0s. 7d. A call of 5*l.* per share was made.

At a meeting of adventurers in the Providence Mines, held on the 22d May, the accounts were produced, showing—Balance to end of Jan., 863*l.* 13s. 10d.; sundries, 270*l.* 17s. 4d.; sale of tin ore, 2894*l.* 18s. 11d.=4029*l.* 10s. 1d.—By labour cost for February, March, and April, 1501*l.* 3s. 7d.; carriage, 41*l.* 2s. 9d.: materials and coals, 509*l.* 6s. 7d.; lords' and bounders' dues, 131*l.* 3s. 2d.; dividend of 6*l.* per share, paid Feb. 20, 672*l.*—leaving a balance of 1174*l.* 14s., from which a dividend of 8*l.* per share, amounting to 896*l.*, was declared.

At the Tresavean meeting, held on Tuesday last, the accounts were presented, showing—Balance at the end of Feb., 917*l.* 3s. 5d.; ores sold (less dues), 1815*l.* 13s. 8d.; sundry credits, 214*l.* 12s. 11d.=2947*l.* 10s.—To costs and merchants's bills for March and April, 2133*l.* 18s. 6d. . leaving balance, 813*l.* 11s. 6d.

At the Trethellan meeting, held on Tuesday last, the accounts for January, February, March, and April, were presented, showing—Balance from last account, 194*l.* 4s. 11d.; ores sold (less dues), 1210*l.* 0s. 3d. = 1404*l.* 5s. 2d.—To costs and merchants' bills, 1086*l.* 6s. 9d.: leaving balance, 317*l.* 18s. 5d.

At the West Trethellan meeting, held on Tuesday last, the accounts were presented, showing—Balance last account, 166*l.* 7s. 11d.; ores sold (less dues), 277*l.* 4s. 7d. = 443*l.* 12s. 6d —To costs and merchants' bills for Jan., Feb., March, and April, 194*l.* 8s. 9d.: leaving balance in favour of mine, 249*l.* 3s. 9d.

At the meeting of Keswick adventurers, a proposition was made that, in consequence of greater power being requisite to keep the water, the directors were empowered to adopt such measures as they deemed prudent, after an inspection by a competent person. By the agent's report, we find that the bunches of ore in the shallow levels appear to hold down, and fully warrant the carrying out of the above resolution to effectually develope this important sett.

At the meeting of Exmoor Wheal Eliza, a call of 30s. per share was made.

At the Craig Ddu Slate Quarry meeting, it appeared that large sums had been expended during the past year in extending the quarry. A tramway, 543 ft. long, had been constructed, and another excavated 650 ft. up the mountain, and there was every reason to hope that the capabilities of the quarry would be fully developed.

At the Camborne Consols meeting, resolutions were passed, confirming the payments made by, and allowances to, the directors. Reports from Captain Matthew Francis and Mr. Daniell, were read, which were highly satisfactory, as to the state and prospects of the mine.

At the Lamheroe meeting, the accounts showed a balance against the mine of 45*l.* 13s. 6d., but considerable improvement had taken place in the lodes, and the shareholders were highly gratified at their improved prospects. A second instalment of 10s. on the call of 2*l.* was made.

We understand that the sampling at Wheal Treasury in the course of the present week will be above 190 tons.

Shares in the following mines have changed hands during the week:—Devon Great Consols, Treviskey and Barrier, South Tolgus, South Frances, Tincroft, West Buller, Mary Ann, Trelawny, Condurrow, Wheal Franco, South Plain Wood, Moditonham, Penzance Consols, Tremayne, Stray Park, Tregear Consols, Pendarves Consols, Roche Rock, North Buller, West Tolgus, Heigastott Down, Wheal Langmaid, Wheal Virgin, Treleigh Consols, Trethevy, Treville. Kingsett and Bedford, Cook's Kitchen, Grambler and St. Aubyn, Rocks, Providence Mines, Trehane, West Treasury, Alfred Consols, and Drake Walls.

In Foreign Mines, we find that the business done has been chiefly in Imperial Brazilian, Linares, Santiago, Cobre, and National Brazilian, and some transactions have taken place in Copiapo, St. John del Rey, and Worthing.

Despatches have been received from the Imperial Brazilian Mines, the latest date being to the 23d of March, which advises the arrival at Gongo of Messrs. Tregoning and party, who are gone out expressly for the purpose of reducing, on a very large and cheap scale, the almost inexhaustible quantity of unexplored jacotinga, and of the success attending which they are most sanguine. The produce from Gongo was about 1 lb. 3 ozs. of gold per day. The report of Captain Hitchins, the manager, may be considered favourable, in respect to Bananal, as far as he has proceeded; in about a month he would commence to drive the 24 fathom level, which in its progress will give a great insight into the value of this mine. of which Capt. Hitchins entertains a very high opinion.

The National Brazilian letters are to the 22d March; the gold report from the mines Cocaes and Cuiaba, from the 19th Feb. to the 22d March, is given at mks. 39 5 6 54. The report is highly flattering, inasmuch that they cut on the 8th May a rich deposit of gold, being the point at which they have, for some time past, anticipated an important discovery.

The St. John del Rey advices are to the 19th March. The gold extracted to date, being 10 days' working, is given at 7·712 oits. The following 10 days' stamping was retarded by an accident, but an improvement had subsequently taken place, which will enable them to recover. A remittance of 391 lbs. of gold has been received by the *Express*.

The Linares report is to the 18th May, and represents the underground operations as going on satisfactorily. Wilson's shaft was still sinking in good tribute ground, although the lode was not quite so good as last reported. To date of advice there had been weighed in store to next account about 43 tons of silver-lead.

By advices lately received from the mines at Kaw-aw, belonging to the North British Australasian Company, we learn that the accounts are of the most favourable character. The *Kate* had arrived at Swansea with 190 tons of copper ore, and the *Waterloo* with a quantity of regulus on freight.

PENINSULAR AND ORIENTAL STEAM NAVIGATION.—The shares in this company, on which 50*l.* have been paid, were yesterday transacted at 80*l.* 10s. each.

SWANSEA.—The only arrival from foreign ports of any importance since our last, has been the *William Gales*, M'Carthy, master, from Cuba, with 458 tons of copper ore. The *Emperor of China*, Locke, master, has sailed from Swansea for Hong Kong, China, with 520 tons of coal from Mr. J. Parson's colliery; the Sicilian vessel, *Immaculata St. Seuze*, Emmanuel, master, has likewise sailed for Messina with 230 tons of Graigola steam coal.—*Swansea Herald.*

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the past week:—Silver bars to Madras and Calcutta, 16,000 ozs.; silver coin to ditto, 2000 ozs.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	9 ..	—
1024	Alfred Consols	8½ ..	22½
1248	Allt-y-Crib	5 ..	5
1024	Arundell	2½ ..	—
1024	AshburtonUnited Mines	9½ ..	—
1624	Balleswidden	9 ..	14
128	Bainoon Consols	42½ ..	50
905	Barristown	5½ ..	3
3650	Bawden	¼ ..	⅛ ⅛
6000	Bealbury	1 ..	1
4000	Bedford	2½ ..	4⅝ 5
1280	Birch Tor & Vitifer	10½ ..	6 6¼
5000	Black Craig & Craigton	— ..	5
8000	Blaenavon	50 ..	12½
5000	Blisland Consols	1 ..	—
1024	Bodmin Consols	3 ..	3½
5000	Bodmin Moor Consols	1 ..	3
60	Bosorn	5½ ..	10 12½
100	Botallack	182 ..	110
120	Brewer	5 ..	2½
10000	British Iron, New, regis.	12 ..	8
—	Ditto ditto, scrip	10 ..	10
2400	Bryn-Arian	2 ..	1½
107	Budnick Consols	52½ ..	10 11½
260	Butterdon	1 ..	2 3
1000	Callington	22 ..	5
1000	Camborne Consols	7 ..	5½
20000	Cameron's Steam Coal	7 ..	—
256	Caradon Mines	22½ ..	10
256	Caradon United	24 ..	5 8
1536	Caradon Vale	¼ ..	—
1000	Carbona	5 ..	12 15
572	Caradon Wh. Hooper	5½ ..	4⅜
1000	Carn Brea	15 ..	115 120
1000	Carthew Consols	1½ ..	7
113	Charlestown	220 ..	—
500	Combiawn	5½ ..	4⅛
128	Comfort	45 ..	38
256	Condurrow	20. 90	100
2560	Cook's Kitchen	14 ..	6 6¼
1000	Coombe Valley Quarry	5 ..	5 5½
1000	Copper Bottom	7½ ..	—
900	Court Grange	9 ..	10
212	Craddock Moor	23½ ..	5
128	Creeg Braws	120 ..	30
500	Cubert Mine	12½ ..	—
1000	Cwm Erfin	4 ..	3½ 4
1000	Daren	2 .	7 7½
7100	Derwent	10 ..	3
502	Devon&CourtenayCon.	1½ ..	2½ 2⅝
1024	Devon Great Consols	1 ..	240 45
1000	Dhurodo	2 ..	5
182	Doicoath	30 ..	20
2560	Drake Walls	5½ ..	2½ 3
10000	Durham County Coal	45 ..	9
3000	Dyfngwm	10 ..	5
2500	East Birch Tor	3 ..	3
1024	East Buller	2 ..	4
2048	East Crowndale	7½ ..	1½
256	East Godolphin	10½ ..	13
4000	East Gunnis Lake Junc.	¼ ..	⅛ ⅛
128	East Pool	15 ..	72½
9000	East Tamar Consols	1½ ..	1⅝ 1½
256	East Tolgus	1½ ..	7
128	East Tywarnhayle	1 ..	3
94	East Wheal Crofty	125 ..	95
128	East Wheal Rose	50 ..	510
256	East Wheal Seton	2½ ..	2⅝
—	East of Scotland Iron Co.	5 ..	1⅛
1280	Esgair Llee	2 ..	4
248	Exmoor Wh. Eliza	11 ..	10 12
494	Fowey Consols	40 ..	45
1024	Freidd Llwydd Mines	1½ ..	3⅛
256	Garras	41 ..	23
4000	Gen. Mining Co. for Irel.	1⅛ ..	4
2500	Georgia Consols (Tin)	⅛ ..	1⅛
256	Gonamena	44½ ..	10
128	Goonvrea	4 ..	6
256	Grambler & St. Aubyn	80 ..	17½
96	Great Consols	1000 ..	250
512	Great Wheal Badderan	— ..	50
512	Gt. Wh. Rough Tor Con.	24½ ..	20
6000	Grova Slate Company	5 ..	5
1026	Gustavus Mines	3 ..	3½
256	Hawkmoor	12½ ..	70
6000	Heigaston Down Con.	2½ 3	3½ 4½
1500	Hennock Silver-Lead	2½ ..	4 5
4500	Hennock Iron & Tin	2½ ..	2½
512	Herodsfoot	16 ..	15 15½
10000	Hibernian	12½ ..	1⅝
1000	Holmbush	22 .	10
1900	Keswick	10 ..	2 3
1024	Kingsett and Bedford	3½ ..	4 4½
787	Kirkcudbrightshire	8½ ..	5 5½
2048	Lamheroe Wh. Maria	10 ..	6 7
252	Lanarth Consols	— ..	7 8
256	Lelant Consols	47 ..	25 26
160	Levant	— ..	175
1000	Lewis	17 ..	9½ 10
1000	Llwynmalees	9 ..	10
3600	Llynvi Iron	50 ..	50
6000	Marke Valley	10 ..	⅝ 1
5000	Mendip Hills	3½ ..	2
128	Metha	34 ..	—
20000	Mining Co. of Ireland	7 ..	4½
1024	New East Crowndale	2 ..	2
1024	North Buller	1½ ..	3½ 4
100	North Pool	45	450 475
140	North Roskear	5½ ..	160
262	North Wh. Leisure	1½ ..	2
512	North Wheal Vor	— ..	2½
128	Par Consols	55½ ..	650
1026	Pendarves Consols	2 ..	4½ 5
1000	Pendarves & St. Aubyn.	4 ..	5½ 6
1248	Pengelly Tin	1 ..	1
6201	Penuant & Craigwen	2½ ..	2⅝ 3
1000	Penybank and Ergiodd	4 ..	5
1024	Penzance Consols	22s 3d	4 4½
5000	Peter Tavy & Mary Tavy	½ ..	¾ 1
512	Plymouth Wh. Yeoland	6½ ..	6
112	Providence Mines	— ..	150
2500	Rhoswiddol&Bacheiddon	10 ..	10
10000	Rhymney Iron	50 ..	12
10000	Ditto New	7 ..	3
5000	Roche Rock Tin	1 ..	1⅛
2500	Rocks Mine	5 ..	6 7
2048	Runnaford Coombe Tin	1⅝ ..	3 3½
9000	South Tamar	1 ..	2⅝ 3

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
128	South Caradon	5 ..	270
1100	South Doicoath	5 ..	⅛ 1
256	Sth. Friendsh. Wh. Ann	30 ..	28 30
256	South Molton	7 ..	12 13
1024	South Plain Wood	1 6⅛	7 9 12½
300	South Speed	5 ..	5
256	South Tolgus	10 ..	135 140
256	South Trelawny	28½ ..	5 8
2000	South Wales Mining Co.	1 ..	1
256	South Wheal Basset	10½ ..	240
124	South Wh. Frances	160 ..	515
256	South Wh. Josiah	2 ..	3½ 4
10000	Southern&Western, Irish	2½ ..	4
280	Spearne Moor	30 ..	40
128	Spearne Consols	10 ..	60
256	St. Aubyn and Grylls	2½ ..	3 5
94	St. Ives Consols	— ..	80
128	St. Michael Penkivel	5 ..	10½
999	St. Minver Consols	1 ..	6
1000	Stray Park	43 ..	21½ 23
9600	Tamar Consols	3 ..	4 5
10240	Tavistock Consols	¼ ..	⅛ ⅛
1024	Tavy Consols	8½ ..	2 4 5
6000	Tincroft	7 ..	12½ 13½
58	Tokenbury	170 ..	10
240	Tolcarne	8 ..	16½
5000	Tregear Consols	1 ..	1½
256	Tregorden	3½ ..	7 8
256	Trehane	1¼ ..	25 30
8000	Treleigh Consols	6 ..	2⅝ 3 3½
200	Trelyon Consols	— ..	2½
2000	Trehance	3 ..	—
1500	Trenault Lime Quarries	2 ..	3
96	Tresavean	10 ..	95
120	Trethellan	5 ..	18
120	Treviskey and Barrier	130	225 230
512	Trethevy Copper	2 ..	2 2½
512	Treville (Lewanick)	⅛ ..	7⅛
1000	Tyllwyd	2 ..	2½
200	United Mines	50	140 50 60
256	Wellington Mines	25 ..	30
128	West Buller	10 ..	520
256	West Caradon	20 ..	90
512	West Fowey Consols	40 ..	12
1024	West Par Consols	5 ..	—
2500	West Polgooth	5 ..	7
	Ditto Notes	3 ..	4½
512	West Providence	9 ..	20 21
200	West Seton	45 ..	180
120	West Trethellan	5 ..	20
512	West Wheal Frances	1⅛ ..	9
256	West Wh. Friendship	9 ..	8
3845	West Wheal Jewel	12 ..	2½ 3
940	West Tolgus&Treloweth	12 ..	5½ 6
1024	West Wheal Treasury	7 ..	8½
1024	West Wheal Virgin	⅛ ..	⅛
1024	Whiddon Mines	4½ ..	—
5200	Wicklow Copper	5 ..	14½
5000	Wicklow Copper and Sulphur Mines	3 ..	3¼ 3½
107	Wheal Adams	130 ..	150
1000	Wheal Agar	— ..	6
256	Wheal Albert	10 ..	28 29
240	Wheal Anderton	28 ..	—
128	Wheal Ann	— ..	50½
512	Wheal Anna Maria	7 ..	4
120	Wheal Bal	10 ..	22
256	Wheal Benny	19 ..	5
1024	Wheal Bray	11½ ..	—
232½	Wheal Calstock	9 ..	10
256	Wheal Carpenter	— ..	7½
268	Wheal Courtenay	20 .	23
182	Wheal Elizabeth	9 ..	32
256	Wheal Fortescue	15 ..	—
100	Wheal Friendly	70 ..	66½
764	Wheal Franco	27 ..	10 11
4000	Wheal Golden	2 ..	5 6
1000	Wheal Grose	3s ..	5½
100	Wheal Henry	— ..	40
256	Wheal Kingston	⅛ ..	1½
6000	Wheal Langford	⅛ ..	1
—	Wheal Langmaid	— ..	⅛ 1
1024	Wheal Lawrence	3½ ..	3½
112	Wheal Margaret	79 ..	180
512	Wheal Mary Ann	5 ..	40 42
360	Wheal Oak	25½ ..	5
3000	Wheal Penhale	1½ ..	6
210	Wheal Prospect	4 ..	7
1024	Wheal Providence	1 ..	2½ 3
120	Wheal Reeth	41 ..	75 80
198	Wheal Seton	107 ..	250
1056	Wheal Sarah	5 ..	6
512	Wheal Sophia	5½ ..	6
128	Wheal Squire (St. Erth)	— ..	5
128	Wheal St. Ann	30 ..	35
1100	Wheal Trescoll	6½ ..	7
260	Wheal Trelawny	7 ..	92 93
256	Wh. Tremaine(St. Ervan)	9½ ..	2½
1024	Wheal Tremayne	9½ ..	10
267	Wheal Trypheua	40 ..	62½
512	Wheal Venton	2½ ..	3½
1000	Wheal Vincent	5½ ..	7
128	Wheal Vlow (Perranz.)	1½ ..	1½
184	Wheal Vyvyan	— ..	60

FOREIGN MINES.

8000	Alten Mining Company	14½ ..	2½ 2⅝
15000	Asturian Mining Co.	15 .	—
20000	Australian	4 ..	4 3½
6000	Barossa Range	1⅛ ..	1½
10000	Brazilian Imperial	23 ..	6 6⅜
12000	Cobre Copper Co.	40 ..	35⅜
16000	Copiapo Mining Co.	14 ..	4 4⅛
20000	General Mining Ass'n.	20 .	13 13½
4000	Guadalcanal	5 ..	1
2000	Ditto Preferential	2½ ..	2
5000	Kinzigthal Mining Ass.	2 ..	⅜
5000	Linares	3 ..	2 2⅜
500	Ditto New	3 ..	3
5051	Mexican Company	59½ ..	—
20000	Mexican & South Amer.	8 ..	1 1½
5000	National Brazilian	30 ..	3⅝
104000	N. Brit. Australasian	1 ..	8s
7000	Royal Santiago	10 ..	12½ 13⅛
11000	St. John del Rey	15 ..	15
43174	United Mexican ...Av.	28½ ..	6½
10,000	Worthing (S. A.)	2 ..	2

*** We should feel obliged by agents, or others, furnishing us with corrections—our object being to present as correct a list of prices as can be obtained.

PRICES OF SHARES IN SPANISH SILVER MINES.

The following are quotations of shares in the Silver Mines of the Province of Guadalajara, Spain, corrected to the 9th of May last:—

Name of the Mine.	*Number of Shares.*	*Selling Price.*
Santa Cecilia	200	£2304
Suarte	100	1460
Fortuna	100	1400
Consoladora	200	600
Perla	400	60
Segunda Jacoba	100	60
Artistas	100	240
Mala Noche	200	160
Fueoya	200	280
San Vicente	200	200
San Jose de Congostrina	100	100
San Francisco	100	80
La Verdad	100	90
El Nino	100	111
Santa Teresa	100	111
San Josè	100	35
San Miguel	100	[The richest mine of all, and in the hands of one party, who will not sell at any price.]

JOINT-STOCK BANKS.

Shares.	*Companies.*	*Paid.*	*Div. p. cent.*	*Price.*
22,500	Australasia	£40	£1½	£25
20,000	British North American	50	6	41⅛
20,000	Colonial	25	5	7
20,000	Commercial of London	20	6	23
60,000	London Joint-Stock	10	6	17⅛
40,000	London and Westminster	20	6	26⅛
10,000	National Provincial of England	35	6	37
20,000	National of Ireland	22½	5	18⅛
20,000	Provincial of Ireland	25	8	42
10,000	South Australia	22½	6	20 20⅛
20,000	Union of Australia	25	6	30⅛ 30½
60,000	Union of London	10	6	12⅛

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars	per oz.	£3 17	9
„ Portugal pieces		0 0	0
New dollars	per oz.	£0 4	10½
Silver in bars (standard)		0 4	11⅛

LATEST CURRENT PRICES OF METALS.

LONDON, MAY 31, 1850.

ENGLISH IRON. *a*	*per ton.*	
Bar, bolt, &square, London	£5	5 0–5 10
Nail rods	6	5 0
Hoops	7	5 0–7 10
Sheets (singles)	8	0 0–8 5
Bars, at Cardiff & Newport	4	12 6–4 15
Refined metal, Wales*	3	0–3 5
Do. anthracite*	3	10 0
Pigs in Wales	3	0–3 15
Do. do. forge	2	10–3 0
Do., No. 1, Clyde ... *net cash*	2	6 0–2 6 6
Blewitt's Patent Refined Iron for bars, rails, &c., free on board at Newport*	3	10 0
Do., do., for tin-plates, boiler plates, &c., ditto	4	10 0
Stirling's Patent Toughened Pigs } in Glasgow	2	13 0
Toughened Pigs } in Wales	3	0–3 10
Staffordshire bars, at the works	6	0–7 0
Pigs, in Staffordshire		—
Rails	4	15–5 0
Chairs	4	0 0
FOREIGN IRON. *b*		
Swedish	12	10–13 0
CCND		—
PSI		—
Gourieff		—
Archangel		—
FOREIGN STEEL. *c*		
Swedish keg	14	0–14 15
Ditto faggot	14	5–15 0
ENGLISH COPPER. *d*		
Sheets, sheathing, & bolts, *p. lb.*	0	0 10
Tough cake	*per ton*	88 10 0
Tile		£87 10 0
Old copper *e*	*per lb.*	8½d 9d
Yellow Metal Sheathing		8½d
FOREIGN COPPER. *f*		
Chili	90	0 0
ENGLISH LEAD. *g*		
Pig	*per ton*	18 5–18 10
Sheet	19	5–19 10
Pipe	19	10–20 0
Red lead	19	10 0
White ditto	25	0 0
Patent shot	21	0 0
FOREIGN LEAD. *h*		
Spanish, in bond	17	10–17 15
ENGLISH TIN. *i*		
Block	*per cwt.*	3 17 0
Bar		3 18 0
Refined		4 5 0
FOREIGN TIN *k*		
Banca, H. C.		3 10–3 14
Ditto, for Export only		—
Straits	3	8–3 13
TIN-PLATES. *l*		
IC Coke	*per box*	1 6 6–1 7
IC Charcoal	1	12 6–1 13
IX ditto	1	18 0
SPELTER. *m*		
Plates, warehoused	*per ton*	15 0 0
Ditto, to arrive		—
ZINC. *n*		
English sheet	*per ton*	21 0 0
QUICKSILVER *o*	*per lb.*	4s.

Terms.—*a*, 6 months, or 2½ per cent. dis.; *b*, ditto; *c*, ditto; *d*, 6 months, or 3 per ct. dis; *e*, 6 months, or 2½ per cent. dis.; *f*, ditto; *g*, ditto; *h*, ditto; *i*, ditto; *k*, net cash; *l*, 6 months, or 3 p. ct. dis.; *m*, net cash; *n*, 3 months, or 1½ p. c. dis.; *o*, ditto, 1½ dis.

* Cold-blast, free on board in Wales.

GLASGOW, MAY 30.—Fully 50 furnaces have been put out by the strike among the colliers, and more are likely to be put out, as there is no appearance of the masters and men coming to an understanding. The price of pig-iron has, consequently, advanced, and has still an upward tendency. We quote mixed Nos. at 46s. 6d.—cash, free on board here.

LIVERPOOL, MAY 31.—We have had a good business doing in our market this week; and holders of all descriptions of manufactured iron are not anxious to be sellers at present prices. Scotch pig is held for an advance; but there has been no great amount of business done. No change in tin.

SILVER-LEAD ORE

Sold at Aberystwith, May 23.

Mine.	*Tons.*	*Price.*	*Purchasers.*
Court Grange (Pen-y-cefn)	15	£15 0 6	Tamar Smelting Co.
ditto (Llotenhen)	5	13 0 0	ditto

LEAD ORES.

TICKETINGS FOR ABOUT 100 TONS LAXEY LEAD ORE.
Douglas, Isle of Man, May 25.

Bidders.	*Price per Ton.*
Pontifex and Wood (purchasers)	£29 0 0
Walker, Parker, and Co.	18 12 0
T. Somers	18 0 0
Mather and Co.	17 10 6
Combmartin Smelting Co.	17 5 6
Newton, Keates, and Co.	17 1 0
J. P. Eyton	17 0 0
Sims, Willyams, and Co.	16 10 0

Sold at Liskeard on the 27th May.

Mine.	*Tons.*	*Price per Ton.*	*Purchasers.*
Herodsfoot	80	£12 17 6	Newton, Keates, & Co.
Sold at the Mine.			
East Wheal Rose	62	£13 0 6	T. Somers.
ditto	60	14 1 6	J. T. Treffry.
ditto	58	14 0 6	ditto
Sold in London.			
East Tamar Consols	70	£14 16 0	Locke & Co.
Callington	43	17 14 6	Tamar Smelting Co.

BLACK TIN.

Mine.	*Tons.*	*Price.*	*Purchaser.*
Drake Walls	6½	£41 0 0	Bissoe Company.
ditto	4½	35 5 0	ditto.
Birch Tor	3½	44 12 6	Calenick Smelting Co.

COPPER ORES.

Sampled May 15, and Sold at the Royal Hotel, Truro, May 30.

Mines.	*Tons.*	*Price.*
Consolidated	118	£5 0 6
ditto	108	5 2 0
ditto	102	5 16 6
ditto	90	5 15 6
ditto	89	4 13 0
ditto	82	6 7 0
ditto	80	8 12 6
ditto	61	4 6 0
ditto	58	3 7 6
ditto	42	6 14 6
ditto	40	1 16 6
United Mines	111	3 3 0
ditto	102	4 3 0
ditto	94	4 0 0
ditto	85	4 5 6
ditto	79	2 12 6
ditto	78	7 19 0
ditto	76	6 5 6
ditto	75	4 13 6
ditto	51	4 3 0
ditto	38	0 18 6
ditto	33	7 14 6
Treviskey	124	7 15 6
ditto	71	8 8 6
ditto	68	5 4 6
ditto	64	4 4 0
ditto	63	9 0 6
ditto	62	6 18 6
ditto	59	7 11 0
Par Consols	85	2 2 0
ditto	66	5 17 0
dit

NOTICES TO CORRESPONDENTS.

*** We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

PURIFICATION OF GAS.—In the letter of M. F. J. Cavaillon, in last week's Journal, for "sulphate of lime is the basis of *any* purifying powder," read "*my* purifying powder.

"A Mining Adventurer" (Cheapside).—The question is one between the purser and the gentleman who brought the matter before the meeting—the shareholders generally not appearing, at the time or since, much to interest themselves in it. There is no reason whatever in the endeavour to introduce into the discussion the affairs of any other undertakings in which the parties may be interested; nor can we be expected to devote space for controversies which, if not altogether of a private nature, should certainly be brought before the respective meetings, when an opportunity would be presented for explanation. This answer will also apply to "A Constant Reader" (Tavistock), and to two letters received last week.

"A Plumber" (Borough).—Our quotation for sheet-lead, in last week's Journal, was correct. We have made inquiries of other authorities than our own correspondents, and are assured that no material alteration in the price has taken place.

"A Miner" (Redruth).—The subject is under consideration.

"J. W. N." (Stepney).—Argentiferous lead ores are not allowed to be exported from Spain; the ores of the Guaidalcanal Company, which are exported, are antimonial. Litharge, containing more than an ounce of silver per quintal, is prohibited; less than that amount, the duty 6 reals the quintal, if exported in native, and 8 reals in foreign bottoms. Lead containing silver must not hold more than half an ounce per quintal. There are works for desilvering lead at Carthagena; but the Custom-house officials are so indifferently paid, that the exportation is not difficult, and the law is evaded. There is no duty on lead ores in England.

A review of Dr. Lardner's work on *Railway Economy* appeared in the *Mining Journal* of the 23d of March last.

"An Old Subscriber" (St. Agnes).—We believe our correspondent is very near the truth as to the unjustifiable, the dishonest practices which have existed, and do probably exist even at the present day to some extent, of getting up mining companies, not with a view to working, but to gull the public for the advantage of a few scheming promoters. We think his communication, however, too sweeping a condemnation against a body of men, among whom some, at least, are to be found who would scorn to mix themselves up with such transactions; and whose time, indeed, is too much employed in their own legitimate business to allow them to attend to blowing bubbles.

John Matters (City).—The case of the Electric Telegraph Company *v.* Baldwin will come on in a few days, when we shall have a better opportunity of giving the particulars in question.

"W." (Lincoln).—The communication is an advertisement, and can be inserted only as such.

J. Whitehouse (Brettell-lane).—On the general manufacture of iron there are two works extant of much merit, both to be had of Mr. Weale, High Holborn—*The Manufacture of Iron*, by Frederick Overman, Philadelphia, U. S., 1850, and *Traite de la Fabrication de la Fonte et du Fers*, par Hachat, Barrault, et Petiet, 3 tomes, 4to. et une folio, et Atlas de Peintes; Paris, 1850. Mr. S. B. Rogers's data for blast-furnace managers was published in our columns in 1843.

"A Mine Agent" (B. C., Calstock).—Surely the writer cannot expect us to insert his communication? We could by no means soil our columns with such filthy trash.

"John O. B." (Devonport).—Lead pipe would *not* answer for a safe lightning conductor. Even if its conducting powers were good, which they are not; the low temperature at which it fuses would render it liable to repeated destruction.

"M. E."—A description of the lattice bridge on the Rugby and Leamington Railway appeared in the Journal of the 27th April.

"W. R." (Old Broad-street).—We do not know when the "Synopsis of the Cornwall Ticketings for Copper Ores" will appear.—Apply to Mr. Polkinghorne, Fowey Consols, near St. Austell.

"N." (Cheapside).—The communication is declined; it is altogether of too personal a nature for our columns. Address the parties referred to by private letter.

*** It is particularly requested that all communications may be addressed—

TO THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL
Railway and Commercial Gazette.

LONDON, JUNE 1, 1850.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

The strike among the colliers in the Lanarkshire and Ayrshire districts still continues; and we regret to find that above half the furnaces have already been blown out in consequence. There appears no reason to hope for an early good understanding between masters and men; and more furnaces being put out of blast must be the result. There are now only eight furnaces at Gartsherrie at work, and but two at Calder; while the Ayrshire Works are standing still for want of coal. At the present moment, we may safely say there are 50 out of 98 standing still, which supply the wants of the general market. How long this state of things is to last, it is impossible to say. The colliers have already remained out longer than was expected; and even if they resume work shortly, they will most probably strike again when the potatoes are becoming ripe, and at harvest time; and it is, therefore, feared that the stocks of coals will remain almost *nil* during the next few months. The consequence of this unsettling of the regular progress of the make is, that considerable business has been negotiated in Glasgow market during the last few days, and the market closed for good merchantable brand, buyers, mixed numbers, at 46s. 6d. per ton, cash; and a further advance may, therefore, be fairly expected. From several original private letters between parties in the trade, during the past ten days, it is evident that there are numerous buyers who would be glad to transact largely at the above quotation, or even at 47s.—in fact, the market presents the anomaly of all buyers, no sellers; and, under such circumstances, the price must advance. While on the subject of iron, and the strike among the colliers, we would say a word on the truck system, observing an article thereon in the *North British Mail*, which we give in detail. We have ever set our faces most strenuously against the truck system, properly so called—that by which tickets, representing a portion of their hard-earned wages are given for present necessities, which can be changed only at certain shops, or beer-houses, belonging either to the coal-owners, or the agents, whereby the poor families are charged from 12 to 15 per cent. more than they could obtain the same goods for elsewhere. To their shame, be it spoken, some of the masters have formerly been known to take 10 or 12½ per cent. on all goods sold by the shopkeeper under the truck monopoly. We trust no such glaring case as this could be found now. Keeping a store on the colliery, where good articles are sold at a fair price, and advancing the men cash, is an accommodation rather than otherwise, and, at least, leaves the men independent; this we do not call the "Truck System." The following is the article alluded to:—

Much misapprehension exists in the public mind regarding what is called the "Truck System" in the mining districts; and, since the strike which has taken place amongst the colliers in the Airdrie and Coatbridge district, the subject of truck has been the great theme with all the speakers at the meetings of the colliers. It is, therefore, of some consequence that the real state of the matter should be known, and, perhaps, the simplest and most efficient way of doing so, is to describe the state of matters in one of the most extensive works in the district, as we found them on a personal visit yesterday.

But it may be premised that the word "truck" is entirely erroneous when applied to such stores as we are about to describe. There is a distinct, clear, and explicit law against the Truck System, and those found infringing that Act can easily be subjected to the penalties. What is sometimes miscalled truck, is simply the fact of an employer of a large number of workmen having a shop in connection with his works, where his workmen can purchase goods or not, as they choose; and where, in the present case at all events, as good or better value is obtained than at any of the shops in the neighbouring village. There is no law against this; and most of the ironmasters in the district have such establishments, which are found both a convenience and a saving to the workmen.

In the extensive coal and iron works under notice, there are several hundred workmen employed in the various departments, as bar and pig-iron men, miners, contractors, and colliers. On inquiry, we learned that they are divided into four classes, which are settled with in rotation, one each week. There is thus a monthly settlement for each class; and during the intervening period the men are allowed advances in proportion to the amount of labour they have produced. The manner in which this branch of the business is conducted is as follows:—Regular returns are furnished to the clerks in the pay-office of the earnings of each man; and against these earnings the men are allowed to draw money on account—in many cases in advance; but, in any case were asked within a very small margin of the amount due. The advance is paid in cash, and the workmen can go where he will, or do what he likes with it.

Near the cash-office, but not under the same roof, is a commodious store, divided into two departments—one for soft goods, and the other for those articles requisite for the "inner man," including butcher meat, bread, meal, butter, cheese, &c. On examination, we found the prices fully as low, and, in several cases, lower than the same articles are sold for in town, whilst the quality is uniformly excellent. Perhaps the most satisfactory proof of the good value given at these stores is, that during the last year the sales to parties not connected with the works amounted to upwards of 2000*l.*, or 40*l.* a week, although there are some excellent shops in the adjoining village.

In the store no credit is given. The workmen must wait for an advance of money before they can get any goods; and then, if they find that they can be better served elsewhere, they are at liberty to lay out their money to the best advantage, as there is no stipulation or understanding that they should lay it out in the store; and, in point of fact, not one-sixth of the sum paid in wages is spent in the store at all!

The profit which the ironmaster thus clears by his store is legitimate and fair, and induces him to make advances to his workmen between pay-days, which he might not otherwise do, and thereby leave the men to get credit where they could, and pay most usuriously for the convenience. In many cases, where the men are ordinarily provident, no advance is required, and the entire month's wages is received on pay-day; but no difference is made as between these and the many who live from hand to month, and obtain advances—often in excess of their earnings. The following is a price list of some of the principal articles in the store, all of first quality:—Beef steaks, 7d. to 8d.; roasting joints, 6½d.; boiling pieces, 5d. to 5½d.; quartern loaf, 6d.; brown tommy loaf, 4d.; north country oatmeal, 1s. 6d.; east country, 1s. 7d. per stone; fresh butter, 10*d.* The beef is slaughtered on the premises, and there is a bakery attached, where about 35 bags of flour, of 280 lbs. each, are baked weekly. How absurd, then, the outcry respecting stores conducted as this one is. The employer stands in the same position as any other shopkeeper; only that he is enabled to give better value, in consequence of there being no bad debts, and from the greater uniformity in the extent and demand for *his* goods. It, is therefore, a legitimate profit that is derived from such stores, and no one has a right to complain of that profit, when he is at perfect liberty to draw his wages and expend them elsewhere, if he finds it more to his advantage. In fact, in many cases, the workmen have insisted upon such stores being established by employers for their own convenience and advantage. The subject however is not yet exhausted, and will form matter for a column another day.

In the month of June, last year, the *Times* took occasion to warn the public against a certain Californian gold region association, which drew forth a letter from the *secretary*, certainly making matters worse. In the MINING JOURNAL of 16th March last, we cautioned the public against another certain Californian project, under the attractive title of the *Anglo*-Californian Gold Mining and Dredging Company, of which advertisements, in the shape of a prospectus, were covertly popping out occasionally in obscure provincial newspapers; and our caution also drew forth an indignant reply from Mr. Secretary WILLIAMS, which we published in the next week's Number, with some remarks appended. From communications received, and from personal information from parties interested, whose suspicions have been raised, we find, to our astonishment, that an expedition, or something to represent one, really did sail, and that they are again with the inspiriting summer breezes actively taking the field. We have before fully exposed the absurdity of the two reports, said to be furnished by Mr. PALMER, an "eminent engineer," which were, doubtless, concocted in the office of the association. The writer did not even know the character, or natural distribution of the metals he wrote about; and we again unhesitatingly pronounce the whole scheme to have the appearance of a mere hoax. They may, or may not, have obtained the services of Sir HENRY VERE HUNTLEY, R.N., late governor of Prince Edward's Island (a high sounding name); but we have known higher titles than this not only join in fraudulent bubble schemes, but figure as princes of black legs in West-End hells. Of course, by this we mean no disparagement to Sir H. V. HUNTLEY, who may have been himself deceived—we here speak of a public adventure, and, as such, it is the duty of the journalist to expose abuses when he may believe them to exist.

If this wonderful property, which has been so liberally bestowed upon them for a mere song by Capt. TREMAINE, is really a mine of such incalculable wealth in gold and silver, with tin, nickel, and palladium, "which will open a source of profit superior to the gold itself," and among which even *sodium* has been discovered, how is it so *respectable and influential* a body of men as the directors cannot find a few friends to join them, and work it as a private speculation? We notice that the attention of the *Times* has been also again called to the subject, from a similar application as made to ourselves, by parties who have sown their cash, but who begin to fear, not to reap a golden harvest; we cannot do better as a caution to parties having a little money to spare, than quote the concluding paragraph of an article in that journal of Wednesday last. The writer observes—

To persons unacquainted with the way in which the public may be deluded over and over again by the stalest devices, it would seem impossible that a scheme of this kind should require a word of comment. But the fact of an expedition having actually sailed denotes that money must have been raised, and the name of Sir Henry Vere Huntley, whom the concoctors have contrived to engage as "Chief Superintendent of the Works in California," may not unnaturally put many off their guard. It is necessary, therefore, to remind all those who may have a fancy for taking shares, that every account hitherto received from California has established the fact that not a single instance has yet been known where miners have continued to work as a partnership body, even when the total profits were to be fully divided amongst them, so that the prospect of men working in order that the results of their labour may be transmitted to shareholders in England may easily be estimated. In case, however, this fact, coupled with the style of Mr. Palmer's reports, and the questionable circumstances connected with the issue of the former prospectus, should not be enough to excite caution, it may be as well to mention that the only known city name in the published prospectus of the company is that of Messrs. Spooner, Atwoods, and Company, who are made to figure as its bankers, and that this firm, upon application being made to them, state that *the company have no account with them, and have never had authority to use their names.*

A case of some importance to patentees and lamp manufacturers was tried before Mr. Baron PARKE and a common jury, on Saturday last, the 25th inst., in the Court of Exchequer. It was an action brought by a Mr. LONGMEID, a tailor in the employ of Messrs. STULZ and Co., against Mr. HOLLIDAY, the well-known self-generating gas lamp manufacturer, of Holborn Hill, and a mineral spirit maker at Huddersfield, in Yorkshire, with establishments also at Manchester and Sheffield, for compensation for injuries received by plaintiff's wife, from the bursting of a lamp supplied by defendant. It appears that having a large family, the plaintiff, to increase his income, appropriated the lower part of his house in Grays Inn-lane, to the purposes of a coffee and chop house, which his wife was to superintend during his unavoidable absence. Having made the necessary inquiries as to the best means of lighting the coffee-room, Mrs. LONGMEID bought one of Mr. HOLLIDAY'S lamps, which was described in a printed circular as "a self-generating gas lamp, producing a light of surpassing power and brilliancy, which for economy had never been equalled, giving a light superior to 12 mould candles, at the small expense of ½d. per hour, and perfectly free from danger." Plaintiff's wife carried home the lamp, and while it was being fixed it exploded, and burnt her in a most awful manner. After suffering dreadful agony under medical treatment at home, it was found necessary to have her conveyed to St. Bartholemew's Hospital; while there, "lumps of flesh" came from her arm, and although better, she was still suffering lamentably, and the sinews of one arm were much contracted. The counsel for plaintiff complained that the tube of the lamp should have been "brazed," whereas it was only soldered, to which the accident was attributable.

JAMES HALL, who described himself as an engineer in the service of defendant, stated that he remembered the plaintiff's wife coming to the shop on Holborn Hill in March last year, and purchased the lamp in question for 8s.; that he carefully examined every lamp that left the premises to see that they were safe, and would stand the heat, and that the one in question was perfectly safe when delivered. The invention was patented about two years since, and already upwards of 20,000 had been sold without complaint: he described the make and action of the lamp, and said that when the plaintiff brought back the lamp after the accident, he suggested that it should be tested, to try if it had been leaky, but plaintiff refused, and would not let it go out of his hands, offering, if the money was returned, to say no more about it.

Mr. SUGGETT, a lamp manufacturer, of Queen-street, Cheapside, who was called for defendant, said the lamp in question had been improperly soldered in several places; but, even if it had not been so soldered, it was unfit for the generation of gas from naptha, as it was only a quarter inch tubing, and should have been three-eighths; there was not sufficient substance in the metal, and the tap was absent from the centre of the pipe. If brazed, it would have borne 300 lbs. pressure to the square inch; but a perfect tube, to be safe, ought to bear 800 lbs. on the inch. The solder was in a part where it was sure to melt; but brazing would bear a temperature of 500° without melting. He gave it as his opinion that the lamp was unsafe when sold, and stated that he had sometimes as many as five or six of defendant's lamps in a week to put new tubes in. Evidence was given of the injuries sustained by plaintiff's wife, whose symptoms, for some days after the accident, were most alarming. The bricklayer who was fixing the staple to the ceiling stated the damage done to the coffee-room must have been between 20*l.* and 30*l.* Mr. WATSON, for defendant, contended that the accident was caused by the carelessness of the female herself, who, in handing up the lighted lamp, tilted it, and caused the spirit to flow over the top of the reservoir, thus causing the ignition, and the subsequent painful consequences. Baron PARKE summed up, leaving it to the jury to say whether they had or had not sold a perfect and safe lamp. After an absence of an hour and a half, they returned a verdict for the plaintiff, damages 10*l.* Without giving an opinion as to the justness of the verdict, either one way or the other, we would just suggest as a caution, that the highly volatile spirits used in these lamps is at all times a dangerous compound, highly inflammable, and in all the various lamps in which it is employed under the term camphine, mineral spirit, naphtha, &c., it should ever be used with caution, and by experienced persons.

In the *Railway Record* of the 18th May, we noticed an article on a patent taken out by a Mr. WILKINSON, for generating steam power in conjunction with heated air, in which, as the alleged results appear to us to be highly exaggerated, and the statement of the extraordinary increase of power obtained fallacious, we think it right to call attention to the subject. It was there stated that the principle consisted in the injection of a stream of air, heated up to the high temperature of 600 or 800 deg. Fah. into the boiler, by which means the temperature, and consequently the expansive force, of the steam was greatly increased. The object is effected by an iron pipe bent in a serpentine form, so as to present a great extent of heating surface in a given area, being placed over the glowing part of the fire. One end is inserted above the surface of the water in the boiler, and the other end connected with an injection air-pump. At every stroke of the piston the same quantity of *cold* air is injected, at whatever degree of pressure the engine may be working; that portion of air next the pump is forced onwards into a hotter place, and the portion previously occupying that place is forced into a hotter still, until that nearest the boiler, the hottest of all, is discharged into the steam. This action is kept up continuously, notwithstanding the momentary stoppage of each stroke of the pump. It is further stated that, with a fixed engine, the results showed a saving in fuel of from 25 to 30 per cent.; and we are even referred to the party who first allowed the principle to a small engine; but on enquiry we find he has gone back to the old system, and, to use his own words, "I will say nothing about it one way or the other."

Now, as this statement is likely to mislead, we would call the attention of such of our readers who may be interested, that previous attempts have been made to force heated air, the gaseous products of combustion, &c., into the steam space within the boiler, with a view to increase the temperature and expansion of the vapour, all of which, we believe, have proved failures, and it appears to our view that such would naturally be the result. It is a robbing-Peter-to-pay-Paul system, and must be productive of a loss, rather than a gain of power, and consequently an increase in the consumption of fuel. A body of cold air injected into the tube at every stroke of the air-pump immediately abstracts the difference of temperature from the furnace, between the natural atmosphere and the heat of the tube, which would probably be, according to the above statement, about 700°, thus acting as a continuous cooling power to the boiler, and abstracting from it so large a portion of caloric, which would otherwise act direct upon its surface. Add to this the extra load placed upon the engine, in the shape of friction, to work an air-pump against a continually expanding body of air; and we believe our scientific readers will think with us that certainly no saving can be effected, but the contrary. From the great oxidation, too, of the inner surface of the pipe, which must also be in operation, it cannot be very lasting; and as the air in contact with the iron at such a state of incandescence would be decomposed, a large proportion of free hydrogen would be unavoidably let into the boiler, the effects of which we must leave our readers to judge.

COMMUNICATION BETWEEN HOLYHEAD AND DUBLIN.—A pamphlet, published by Ollivier, Pall-mall, has just appeared, recommending a novel mode of expediting the passage across the Irish Sea, securing speed, regularity, comfort, and comparative freedom from sea sickness, developing, to the fullest extent, the capabilities of the railway system on both islands, and securing to the unfortunate shareholders an adequate return for the capital sunk. To accomplish this certainly desirable object, the writer proposes the construction of a sort of express sea train, or immensely powerful vessel, vastly greater than any hitherto employed, to be of not less than 1200-horse power, and from 1200 to 1500 tons measurement, the draft of which need not exceed 12 feet. Startling as this may appear, it is stated that the first-rate marine engineers in England have been consulted, and pronounce the proposal perfectly practicable; and it is estimated that such a vessel would make one voyage at a uniform rate of three hours, possess splendid accommodation for hundreds of passengers, and go so smoothly through the water, that sea sickness would be well nigh altogether unknown. The expenses are calculated as follows:—Cost of ship, 26,000*l.*; engines, 72,000*l.*—total cost, 98,000*l.* The present Post-office packets being retained, making their usual voyages as at present, it is proposed to make only one passage each way every day, except Sunday; and the annual cost would thus be:—Coal, 13,146*l.*; wages, victualling, engineers and stokers, oil, tallow, and sundries, 7000*l.*; interest on the 98,000*l.*, insurance, repairs, and depreciation, 24,500*l.*—making a gross annual cost for 626 passages, 44,646*l.*, or 858*l.* per week, being about 1-300th part of all the receipts of all the railways in the kingdom—not a very great sum for so national an object, if all loss. But as the writer gives no estimate for the passage money which would be received, we would just suggest that, with moderate fares, there would be no loss, but probably a gain, particularly when the writer's estimates for the annual expenses are evidently in excess. We think, when it is considered what immense facilities would be opened for communication between the two islands, the number of passengers per day may be safely estimated at 500, which would produce, at 2s. 6d. per head, or less than ½d. per mile, 39,125*l.* Never has there been such a plan proposed for the regeneration of Ireland, and for infusing vitality into all the railways, both in Ireland and England; and as it is not probable the Government will undertake the measure, it is worthy of consideration for those companies whom it would so much benefit to complete it among them. It would include all the great lines in the kingdom, would be but a trifle among them in construction; and if a loss should arise in the direct water traffic, it would be completely swallowed up in the indirect advantages which would accrue to all.

NON-LIABILITY OF RAILWAY COMPANIES ON CONTRACTS, UNLESS UNDER THEIR CORPORATE SEAL.—A case of very considerable importance to contractors was heard in the Court of Exchequer, on Tuesday last, in which it was laid down by the Court, that railway companies could not bind themselves to a contract made by the directors, except in certain peculiar cases, unless such contract was made under the common seal of the corporation. It was an action brought by one Diggles, a contractor, against the Blackwall Railway Company, for work and labour done and for goods supplied; and at the trial before the Lord Chief Baron a verdict was taken for the plaintiff, with 1778*l.* damages, subject to a motion to enter a nonsuit, should the Court be of opinion that the action could not be maintained, on the ground that defendants being a corporate body, the law required that the contract should be under the common seal. A rule was accordingly obtained upon such grounds by the Attorney-General in last term. Sir F. Thesiger, Mr. Knowles, and Mr. Atherton, appeared for plaintiff, to show cause against the rule. It appeared, that when the defendants contemplated the alteration from the rope traction to the locomotive system, they advertised for contracts; the plaintiff's tender was accepted, and he executed a bond, binding himself to execute the works within a certain period. Defendants also undertook to execute a formal contract, but a portion of the works (that for which the action was brought) was completed before the execution of such contract. A dispute having arisen, plaintiff refused to proceed further, and brought his action. According to the view now taken, such a law would act most injuriously on railway companies themselves, as parties would hesitate to perform work, in fear of being defeated on this objection. Mr. Martin appeared in support of the rule, and contended that this was just the case in which the law, that corporations could not bind themselves, except by a contract under seal, should be carried out; it was ridiculous to compare this contract to ordinary or trivial repairs. The works contracted for were extensive, and all the formality required by law to bind the defendants should have been observed. Even trivial matters came within the objections, unless on account of urgent necessity. The court observed, there was no doubt about the law, that a corporation could not bind themselves by a contract, except in certain trivial cases, unless under their common seal. The present case did not fall within any of those exceptions, which were confined to immediate exigencies, and were applicable only in cases where immediate necessity dictated a departure from the general rule; or where the work was too insignificant to be made the subject of a special order under seal. The rule for a nonsuit must, therefore, be made absolute.—Plaintiff was accordingly nonsuited.

SUPPLYING WATER TO CITIES, &c.

[Patent granted to Henry Lamplough, of Snow-hill, consulting chemist, for a mode of supplying pure water to cities and towns.]

This method of supplying water consists in causing it to pass through a system of pipes, or syphons, so arranged and combined in connection with the source of supply (and suitable intermediate reservoirs), that the water may be supplied as required without pollution, or contamination, from extraneous matter. The arrangements for this purpose are shown by drawings annexed to the specification, representing the line of pipes employed for the purpose. These pipes, which may be of iron, or glass, or other suitable materials, are to be laid upon or by the side of railways, canals, roads, or in any other convenient situation, and are to be joined together by some of the various methods ordinarily employed. The filling and working of syphon pipes is well understood, and in the event of its being necessary to pass the water over any elevation exceeding 30 ft. propulsion by artificial means, in connection with the system of syphons, may be resorted to; but the patentee states that he makes no claim to the use of such artificial means, except in connection with a system of syphons combined and arranged as above described, for the purpose of supplying water to towns, and the irrigation of lands and drainage; and declares his invention to consist in combining and arranging a series of pipes, reservoirs, and syphons, with propulsive power when needful, in the manner above described and represented, for the purpose of conducting water to towns.

ATTRACTION OF OCEAN TRAFFIC TO RAILWAYS.

Mr. R. Heathfield has submitted a communication to the Right Honourable the Commissioners of Railways, on the neglected construction of a few important links of railway which would bring into direct communication the numerous sea ports in England, secure the rapid transmission of goods at once to their destination by rail, at a great saving of time and money, and prevent those awful cases of destruction of life and property on the Godwin Sands and numerous other spots which are so often recorded. He considers the vast sum of 200,000,000*l.*, which have been invested in railways, has been done by parties not only in concert, but in a spirit of emulation, rivalry, and contention; and thus railway communication, which should have been governed by expansive and comprehensive views, has most lamentably been controlled by partial and sectional considerations. Attention in this appeal is particularly called to one point which may well excite surprise—that through the want of a short connecting link or links of rail not exceeding 20 miles, and probably reducible to not more than five, the communications between the north and south, and east and west are broken and interrupted, and the commerce of the country, internal and external, home and foreign, is deprived to a most injurious extent of the advantages which this great delegation of power, expenditure of capital, and exercise of professional skill, might, and should have effected.

Mr. Heathfield then proceeds to show that a line from the South-Western Railway at Brentford, extended to Ealing or Acton, not more than two miles, would intersect the Great-Western; from two or three miles more would intersect the North-Western; the North-Western will shortly command the communications with the Great Northern, East and West India Docks, and the Eastern Counties lines. There may, or may not be, objections of a social or scientific nature to this, the shortest line of junction. If there be, the South-Western from the same point might be carried on to the Great-Western at Southall, and thence to the North-Western at the Harrow station, about seven miles, still leading to the intersection of all the lines to the eastward, as before, with the opportunity of an extension, if desired, from Harrow to the Great Northern, at the Hornsey station, or more to the northward, if preferred.

The writer considers this a case for the interference of Government, and suggests that no Bill should be allowed to pass into Parliament by the commissioners without due regard being had to this great commercial want—the power of passing goods from sea to sea throughout the island, as it can be effected with the construction of so few miles of rail. As this would most undoubtedly add enormously to the existing traffic, it becomes a plea, which, if attended to, will prove greatly to the interests of railway proprietors themselves, as also a plea for the widow and orphan, and the vast body of persons who have their property locked up with little or no return in railway enterprise. Mr. Heathfield concludes as follows:—"Without the risk of any material diminution of our commercial marine, by the shortening of the voyage, but with the expectation of making this country in reality the emporium of trade, a vast amount of traffic, and especially of merchandise, might be attracted from the ocean to the rail. The maritime position and easy charges of the port of Southampton, in particular, justify this expectation; whilst the recovery of the railway interest to a better state, depends essentially upon this attraction to the rail of masses of goods now water-borne, at a fearful expense of life and property, and which transfer must ensue, from considerations of economy both of time and money, provided the several railways be made to inter-communicate, and the charges of transit be regulated in such manner as might reasonably be afforded to a full and constant traffic."

It does appear singular that this trifling junction should have been so long untouched upon, but we fear it has arisen from that spirit of opposition and rivalry which has so characterised bodies of railway directors. We would, however, call the serious consideration of the subject to all whom it may concern, and refer to a review of a pamphlet published by Effingham Wilson on the same subject, and which we shrewdly suspect is by the same author.

SEVEN-MILE RAILWAY TUNNEL THROUGH THE ALPS.

The following details are gathered from Dr. Granville's paper on the above undertaking, read at a recent meeting of the Royal Institute of British Architects:

To give at once some idea of the boldness of Chev. Mons's undertaking, we may, in the first place, state that in its progress the tunnel must pass under some of the most elevated crests of Mont Cenis,—one, in particular, where there will be 4850 feet of mountain, capped with eternal glaciers, over head, at the middle of the tunnel, so that not only will the workmen, the machinery in construction, and the passengers and trains in transit, be buried to that depth in the heart of the mountain, but all idea of shafts, either to facilitate excavation, or to promote ventilation, must be out of the question. The breath of life itself must be respired, from either extremity, with artificial aid, in shape of currents of fresh air transmitted, and of foul air withdrawn, by mechanical apparatus ever at work, at least during excavation, which is also itself to be effected by machinery of a new and simple nature, worked by water power of mountain streams, whereby the trains are also to be run through the tunnel, which ascends, from the northern or Savoy side, at Modane, all the way to its exit at Bardonnèche, with a gradient equal to 19 in 1000. The excavating machinery consists of—

1. Two great hydraulic wheels, 18 feet in diameter, which move—
2. Two pulleys (with an endless cable twice round them) placed horizontally, and of 30 feet diameter, performing 22½ revolutions in a minute.
3. An endless cable connected with the cutting or excavating machine. This cable will move at the rate of 35 feet a second.
4. A counterpoise or weight to keep the endless cable in a suitable state of tension at the opposite end of the hydraulic wheels, and to travel on a waggon between these and a great well sunk purposely to receive a corresponding weight at the end of a rope.
5. The machine, which, once presented to the rock, projects into it simultaneously, four horizontal series of sixteen scalpels, working backwards and forwards, by means of springs cased in, and put in motion by the same water power. While these are at work, one vertical series on each side works simultaneously up and down, so that together they cut four blocks, or rather insulate four blocks on all sides, except on the rock behind, from which they are afterwards detached by hand.

During the operation, a squirt-pump throws out a jet of water between each pair of scalpels, to prevent the heating of the tools, to soften the stone somewhat, and to wash out the rubbish. After their complete separation, the blocks are pulled out by help of the endless cable, and received in a waggon underneath, to be withdrawn from the tunnel altogether.

The rocks expected to be found are gypsum, limestone and quartz veins. No land-drift or land-springs are likely, it is thought, to interfere with the progress of the work, or to require any masonry within the tunnel. It has been already ascertained that each of the two machines, at the opposite ends of the tunnel, will excavate to the extent of 22 feet a-day, and it is estimated that the whole excavation will be completed in four years. The gallery to be perforated by the machines will be 13 feet wide by 7 feet high, and this once cut through, the bore will be enlarged by ordinary means to 25 feet in width and 19 feet in height, and a double line of rails laid. ventilation is to be effected by attaching a ventilator to the axis of each *poulie de support*, the movement of which being rapid and continuous, the ventilating machine, composed of a drum and a tube, will be constantly inspiring fresh air and expiring foul. The estimated cost of this great tunnel is only 13,804,942*f.* (552,197*l.*). It is to be immediately commenced at the north entrance.

At Lord Rosse's *soirée*, Mr. C. Walker exhibited his lightning conductors for electric telegraphs, consisting of hollow brass cylinders, one for each wire connected with the earth, in each of which is a continuation of the telegraph wire, so furnished with points for promoting the discharge in parts of the course that the lightning escapes more readily by these cylinders than by passing the telegraph instrument, and having a fine wire included in another part of the course more favourably circumstanced for being ignited, if the force be great, than the fine wire instrument coils. Mr. Walker also exhibited his plan of insulating and protecting telegraph wires in a tunnel, and his method of improving the insulation of the wires of the electric telegraph.

MINING IN SPAIN.

The public not being aware of the European importance which mining affairs in Spain are progressively assuming, or of their magnitude and prosperity, we have very great pleasure in giving insertion to the first part of a highly-interesting descriptive paper on the subject, which has been obligingly forwarded to us by an intelligent correspondent, the publication of which we shall continue until completed. We would here also further call the attention of our readers to a remarkable feature in another column, totally unconnected with the present article—a share list of Spanish mines, as giving conclusive evidence of the importance which is now attached to mining affairs in the Iberian peninsula, and for the information of those to whom it may be interesting:—

In the centre of one of the most picturesque bays of the Mediterrenean, which bounds the Spanish province of Murcia on the south, rises a gigantic rock, surmounted by a fortified castle, and commanding an unbroken line of horizon from Carthagena to Almeria. This rock—the result of submarine action—forms, as it advances into the sea, two creeks, sheltered by it, from opposite winds; the one on the left, being protected from westerly winds, which are the prevailing ones on this coast, and affording a safe anchorage for vessels: this is the port, properly so called. The other, on the right, is more exposed, and is a resort for fishermen, and serves likewise, as careening ground.

It is scarcely 40 years, since nothing but a few miserable sheds existed around these creeks. They have now, however, increased into a town; still humble indeed, but pleasing and well arranged—having a custom-house, office of inspection of mines, and a recognised port of trade. This town, called "Aguilas," presents, from its more elevated points, a panorama of rare and admirable grandeur. Fronting it, a sea of incomparable beauty, revealing in the distant horizon, the culminating points of the African coast; whilst, on its right and left, tower the ever-varying crests, of a triple chain of mountains. Some of these, unfolding themselves, as it were, into most picturesque forms, group around the metalline deposits of Lomo de Baz, Mazaron, and Carthagena; whilst others, pursuing devions windings, spread themselves between the interior and the shore; describing near the town and coast of Almaria, one side of a semi-circle, bounded by Carthagena on the other. In the midst of this arch, stands Aguilas, with its semi-Moorish plain, its isolated hillocks, its furnaces, and smelting works—an obscure point, of which the world would, in all probability, have ever remained ignorant, but for its neighbouring mines, and the growing influence it is thereby daily acquiring.

About 10 years since, or towards the close of the year 1839, two inhabitants of the adjoining town of Cuevas, Miguel Soler and Juan Perdigon, stimulated by a taste for mining adventures, discovered on the mountain of Almagrera, six miles from Aguilas, two mineral indications. To one of these, they gave the name of Carmen, and to the other, that of Observacion. Encouraged by the result of surface trials, they contrived, in the midst of innumerable difficulties, and rejected overtures, to form two insignificant companies, after the fashion of the country, adequate at best, to none but the most unskilful and simple operations. Various were the vicissitudes which marked their early progress; insomuch, that they had nothing before them, but the abandonment of enterprises, for which, in anticipation of protracted results, their small funds were utterly inadequate. But suddenly the scene changed! At a depth of not more than 45 fms. from surface, riches, unprecedented perhaps in Europe, and beyond all anticipation, exploded, as it were, at the feet of the fortunate adventurers;—the several surface indications on each mine, composed of the richest argentiferous galena, here uniting, and forming a mass of ore, which for potency of lode, and richness of mineral, might vie with the richest mines of Mexico. Shares, but lately rejected with disdain at any price, instantly rose to the sum of $54,000 each. Other shafts were quickly sunk on adjoining sets, with equal success, leading to enormous masses of mineral, containing from 12 to 16 ozs. of silver per cwt., and from 45 to 52 per cent. of lead. Smelting works sprung up forthwith around Aguilas in every direction, whilst Government contributed to the general prosperity, by opening this hitherto obscure and closed port, granting to it the privileges of introducing from abroad, all machinery and articles necessary for metallurgic operations, and of exporting their products to foreign countries. Since which time, consignments thereto, of lead and silver, have been constant and abundant. But all that has been done hitherto, is but precursory of greater results, inasmuch as the Sierra de Almagrera, and other similar mineral formations around Aguilas, have by so brilliant a commencement, tested as it were, the issue—guaranteeing it, from the ordinary vicissitudes of mining operations.

In short, though only 10 years have elapsed since the discovery of the first lode, yet, in view of the large fortunes acquired by the original adventurers, emulation has been so excited throughout the country, that trials have been made in every direction—all thinking to find a "Carmen" or an "Observacion" with little or no outlay; but, as too often happens in undertakings thus ill-sustained, legitimate enterprise has been checked by these mere gambling transactions; which after occasioning heavy losses, and much individual distress, have caused the premature extinction of many enterprises, that, with more prudence and calculation, would have led to results, if not so excessive as those of 1839, superior at least, to any derivable at the present day, from the silver mines of Europe. Partial reaction succeeded these imprudencies, and the intoxication of early success, thus led to indifference.

But a mineral district of such approved merit, could not long remain inactive. By degrees, confidence revived, and the workings on many mines, are now resumed. The leading ones, already referred to, with some eight or ten more since developed, continue as prodigal of their treasures as ever; whilst those of a secondary order, whose lodes have been but lately reached, already remunerate their owners.

It is no exaggeration to assert, that in modern times, no silver and lead mines in Europe, have given such large returns as these, within so short a period. Of the ten years that have elapsed since their first discovery, three were lost in groping the way, as it were, to future success. Taken by surprise, the very riches of these mines were, for a time, profitless, owing to the want of smelting-works in the country, and to a prohibition against exporting the ores; insomuch that costly experiments, and heavy impositions, had long to be submitted to by the miners. Yet, in spite of these sacrifices and delays, more than three millions of pounds sterling in silver, and a proportionate mass of lead, have been shipped at Aguilas; apart from all that has been conveyed into the interior of the country, or shipped at neighbouring ports, which may be fairly taken at one-half more. On the other hand, with the exception of some superficial workings in the hills of Lomo de Baz, Cuesta de Goy, and Mazarron, the district may still be considered as virgin ground, in consequence of the little depth attained.

It would seem as if all circumstances united in rendering this spot of the Mediterranean coast, singularly favourable to the united operations of mining and smelting. All the mineral deposits seem to group round one common centre, within short distances of each other, upon a seaboard, where ample freights can be obtained at a cheap rate, and coke and coal be readily introduced for smelting operations; a cheap and plentiful supply of labour; the mines as yet sufficiently free from water, to require no steam, or other machinery; and the lodes, laying at a moderate depth from surface, in a genial and easily-worked formation; thus concentrating elements of success, which are rarely found united.

Amongst these several mineral deposits, that of Almagrera Proper takes the first rank, both as regards the past, and future. This mountain takes its rise, about six miles from Aguilas; its length from east to west, being some eight miles, its mean breadth about two, and its highest elevation above the sea 1050 feet. The formation is transition, and the lodes traverse micaceous schistus. Gorges of every variety of form traverse the mountain, and in these are deposited its treasures; they are called "Barancos," and have been carefully surveyed and classified, by the mining engineers of Government. The most celebrated of these "barancos" is the one called El Jaroso. Here it was that the adventurous Miguel Soler, and his companion Perdigon, discovered Carmen and Observacion, which, between Oct., 1839, and Dec., 1845, have given to their owners *a net profit of one million eight hundred thousand pounds sterling*; whilst all the capital, science, and mechanism lavished in Mexico by England, during 25 years, have as yet ended in nothing but disappointment, loss, and the final abandonment of some of those enterprises.

Almagrera is divided into some 20 of these "Barancos:" the most remarkable of which for their mineral wealth are—El Jaroso, La Cala del Cristal, La Raja, Los Avalos, De la Torre, El Frances, La Insancia, El Hospital de Tierra, El Hospital del Mar, El Fernandez, El Pinalbo de Tierra, La Sima, La Nueva Calanda, El Chico de la Torre, &c.

In each of these "barancos," or gorges, lodes have been discovered, and works of more or less importance established. The first in point of date and richness, as already observed, is that of Jaroso. Here are the important mines of Las Animas, La Constancia, La Esperanza, El Carmen, La Observacion, La Estrella, La Rescatada, La Diosa, San Cayetano, San Gabriel, and La Virgin del Mar, &c. The principal lode running through these mines, is an east and west lode, varying in breadth from 5 to 40 ft., which, at intervals, subdivides into branches of unequal breadth and produce, and variable in their direction. These appear, however, to re-unite ultimately with the main trunk; the medium depth of the workings is about 140 fms. The principal contents of the lode are argentiferous galena, both steel-grained and cubical, oxide of iron, barytes, copper pyrites, and other ingredients of less importance. In Jaroso virgin copper is of common occurrence.

Leaving Jaroso, and proceeding towards the south-east, is the Baranco of Cala del Cristal; in this gorge are three principal mines, called San Felipe, La Impensada, and Santa Ana. These mines are of the same character as those of Jaroso, and only require more ample development to be highly remunerative. The adjoining baranco of La Raja contains valuable mines; such are San Bartolome, L'Oropel, La Cuna, Las Augustias, and La Culebra. The first of these, or San Bartolome, produces a mineral rich both in silver and lead. L'Oropel and Cuna, although impregnated with arsenic and antimony, give a handsome produce in silver and lead. Augustias and Culebra, which yield a fine steel-grained galena, branch out into so many ramifications, as to warrant the belief of a rich deposit in their neighbourhood. In the gorge of Los Avalos, which bounds the mineral formation on the east, there are works well advanced, especially those of San Antonio, Maravillas de Adra, La Acerola, La Misericordia, and San Gines. These repose on a lode, already developed to the extent of more than 100 fathoms, at a depth of only 16 fathoms from surface. Its component parts are for the most part the same as those of Jaroso—argentiferous galena, mixed with iron and barytes, and its breadth is from ¾ to 1½ yard.

The adjoining "Baranco" of Hospital de Mar, amongst other mining sets, contains the two mines, Carmen de Granada and Feliz Encuentro, both of which have cut a lode of fine-grained galena, mixed with iron and arsenical pyrites, the former at a depth of 42 fms., and the latter at 16 fms., and the breadth of the lode 3 ft.

The Baranco of San Fernando is almost untried, there being but few works in it. Amongst these, however, may be mentioned the mines of San Antonio and La Capitana, presenting the same indications as the other barancos. The lode varies from 3 to 4½ ft., and is composed of iron pyrites, barytes, and steel-grained galena. The barancos of La Torre and Frances present very interesting features. These two adjoining gorges were known to the ancients for their mineral wealth. Immense excavations are to be met with, from which great riches must have been extracted; for even at the present day, and in spite of the abandonment of the ancient workings, and the disorder which surrounds them, the branch veins which are worked, sufficiently attest the value of the primitive ones.

[*To be continued in next week's Mining Journal.*]

IMPROVEMENTS IN WIRE-ROPE.

In the *Mining Journal* of the 11th May we gave a brief description of some improvements in the manufacture of wire-rope, which had been patented by Mr. James Buck Wilson, of Haydock Rope-Works, Newton-le-Willows, Lancashire, and we now proceed to lay before our readers further particulars of the invention, which certainly appears important.

The nature of these improvements consists—first, in winding the wire as it comes from the ordinary draw-plates on to blocks revolving from the left hand to the right, and from the right hand to the left, or in opposite directions. By this means, when the wires are made into ropes, the ropes have not any tendency to twist, because the wires, when wound in opposite directions, will counteract each other. In making ropes of wire, drawn in the usual manner, great difficulties arise from the wire bending, or twisting, all one way; this was particularly evident in the round rope Messrs. R. S. Newall and Co. made for the London and Blackwall Railway. In this rope it was found necessary to lay certain lengths of the rope towards the right, and corresponding lengths to the left hand; and, although twisted in opposite directions, swivel joints were used to unite these lengths, which added very considerably to the expense and inconvenience of working the rope. The next feature of importance in the invention consists in forming flat wire-ropes, by causing several series of wires, or wire strands, to be braided together, so as to form, *without stitching*, a flat rope, which may be made of any requisite degree of elasticity by varying the angle at which the wires, or strands, are laid. Mr. Andrew Smith, the well-known wire-rope manufacturer, considered it of vast importance to make flat wire-ropes for mining purposes; and, in 1836, obtained a patent for flat-ropes, of strands of metal wire, properly combined and secured together, either by weaving hempen or other yarns therewith, or by binding, paying, or serving, with string, or spun yarn. Mr. Smith spent a large sum of money in perfecting his invention, which he had to abandon, finding that the wire strands soon wore away the connecting string, or yarn, thereby setting the component strands at liberty. Then, in 1841, Mr. R. S. Newall, of Gateshead, obtained a patent for flat bands, *without stitching*, by weaving wires together in the ordinary way that is common amongst wire weavers, except that he recommended stronger wire for the warp than for the weft. This plan failed entirely, as the wires forming the warp, by riding over each other at right angles, or nearly so, soon caused the weft to be worn out.

Mr. Newall then adopted Mr. Smith's plan of stitching six, or other suitable number, of round ropes together with wires; and although eight wires are generally used for the stitching, they do not add to the strength of the rope; besides, this operation of stitching is not only expensive but injurious, as a passage has to be forced through the round ropes for the wires which bind them together; and as these wires project beyond the edges of the outer ropes, it is evident they are apt to get worn away by the flanges of the pulleys, over which they pass in working; and when this does happen, the round ropes become disunited, and, consequently, unfit for use. There is another objection to stitching a number of round ropes together, which is the chance of keeping the different ropes at precisely the same tension during the process of stitching.

The next claim is a mode of making ropes, which are particularly applicable for standing rigging of ships, as they can be made sufficiently flexible and elastic without the aid of either India-rubber or spiral springs, which are found necessary when wire-ropes, made according to Mr. R. S. Newall's plan, are used. The method of making these ropes is by laying, or coiling, two or more layers of wires in opposite directions, so as to form a compound strand, each succeeding layer being coiled over the previous one in an opposite direction. The spaces between the wires and between the strands may be wormed, or filled up, with gutta percha, hemp, or other matters, to prevent, or diminish, the wearing of the wires against each other; the inner portion of the rope, for some purposes, may be formed of a coil of wire, serving as a core for the diagonal layers; and flat ropes may be made in the same way, by coiling the wires upon a flat mandril instead of a round one. Ropes of a very large size may be made according to this plan, and the degree of elasticity will vary according to the angle at which the wires, or strands, are laid.

The last improvement consists in gradually diminishing the number of wires forming a rope, so as to form a taper rope. Such ropes are particularly applicable in deep mines, or in other cases, where the weight of the rope is greater than the load to be lifted; also making the rope partly flat and partly round, in one length, and without joint.

The foregoing description will be sufficient to convey a general idea of the nature of Mr. Wilson's improvements, and the disadvantages of the wire-rope now known and in use are only pointed out, in order to show more distinctly the advantages of these ropes.

STEAM COMMUNICATION FROM IRELAND TO NEW YORK.—The port of Galway has long been considered as the most eligible of any other in the United Kingdom as a packet station for the United States; but every effort hitherto made to effect so desirable an end has been unsuccessful. We are happy to perceive that the splendid steam-vessel, *Viceroy*, 800 tons, and 350 horse power, is appointed to sail this day from that port to New York, calling at Halifax, and taking out her Majesty's mails. The passage is expected to be accomplished in about a week—Galway, situated on the west coast of Ireland, having the broad Atlantic unobstructed before it. This is an experiment which must be looked to with much interest, the result of which will bring London and New York within eight days communication of each other, and, should such be the case, that port must become a regular mail packet station.

Original Correspondence.

GOLD MINES OF THE ISTHMUS OF DARIEN—CANALISATION OF THE ISTHMUS.

Sir,—I observe, in your last week's Journal, a letter from Mr. Evan Hopkins, in reference to my notes on the above subjects, and, therefore, beg the favour of your insertion of this in your paper of Saturday. Mr. Hopkins represents me as having "been in the Darien examining the rivers and auriferous rocks in the Gulf of San Miguel." Now, I have not done any such foolish thing; and Mr. Hopkins must have read my letter very unprofitably indeed to have arrived at such a conclusion. My researches were far in the interior of the territory of Darien, at the sources of the River Tigra. Your correspondent is also in error in supposing, as I infer he does from the general tenor of his letter, that I apply the name of Isthmus of Darien indiscriminately to all the tract of country from Veraguas to Choco, and that I speak of Darien and Panama as synonymous—these two mistakes being made by all the maps. Now, it is necessary to understand this point clearly, as, by misapprehension of it, Mr. Hopkins appears to think that I have been endeavouring to draw attention to the gold *washings* of Panama, whilst I have actually written on the quartz rock gold *mines* of Darien. The distinction which I made between the two is evident in my letter of the 18th, in which I stated that "I made an excursion into the forests of the Isthmus of Panama, and found that gold was to be obtained by washing the earth on the sides of the mountains, on the banks of the streams, and in the crevices between the ledges of rock in their beds, 'forming bars,' disseminated precisely in the same manner as in California." This passage refers to the gold *washings* of the Isthmus of Panama, which Mr. Hopkins inspected, and which the French company abandoned—"none of them being worthy of a company's notice," as Mr. Hopkins justly observes. I then stated that, "immediately *after* this excursion, I proceeded to the Isthmus of Darien, going down the Bay of Panama to the Gulf of San Miguel"—not stopping there, as Mr. Hopkins supposes (there being no gold that I know of near its shores, except, perhaps, at Garachinè, to which Mr. Hopkins probably alludes under the name of "gold washings of San Miguel"), but "ascending the River Tuyra, or Santa Maria, to Yavisa, the capital of the territory, and to Molinica, which latter I made my starting point in my researches for gold mines," and "proceeding from thence through the forest with a guide and four clearers (Indians)," as far as Cana, where the gold exists in the rocks, and where regular mining is required.

I may now briefly state that, in accordance with the political division of New Granada, of which Panama is a province, and Darien a territory, I call the country between Veraguas, and a line drawn from Chiman River to Punta Brava, the Isthmus of Panama, and all from that line to the mouths of the Atrato, and thence to the Rio Hambre, or Jurador—the Isthmus of Darien; therefore, Mr. Hopkins's operations were carried on in the gold-*washings* of *Panama*, and my researches were in the mountains and *rocks* of *Darien*. Should Mr. Hopkins be kind enough to forward me his report, I can compare it with an articie of mine in the *Panama Star*, and the Spanish paper, *El Panameno*, on the gold washings of Panama; and another in the *Panama Echo*, &c., on the gold mines of Darien, and the difference of the localities in which the investigatious of each were pursued will be immediately apparent. Mr. Perry, the British Consul at Panama, showed me a geological map of the Isthmus of Panama from Portobello to Panama, which I suppose was drawn by Mr. Hopkins; and I believe that his operations were on the Pequeni—a very poor *placer*. This explanation of the confusion caused by an erroneous nomenclature, accounts for Mr. Hopkins's misconception of the tenor of my letter. I agree with him that the washings of Panama are "not worthy of a company's attention;" but this does not depreciate the value of the very rich mines of Darien, nor detract from their claims to public notice. As to the climate of the Isthmus of Darien, Portobello is not in that isthmus; nor does it even give a fair idea of the climate of the Isthmus of Panama. It does not follow that the whole isthmus is unhealthy because Portobello is so. The proof that the unhealthiness is local and endemic is, that it is considered a place of banishment by the inhabitants of the rest of the isthmus. There was scarcely any sickness amongst the crowds of Americans, who were detained for months in Panama and Gorgona, waiting for passages to California. It is, besides, very easy to avoid going to Portobello at all; and no unacclimatised European should have been brought there on any account. Chagres is much preferable for many reasons. Had the Frenchmen been brought there, none of them would have died. Finally, Mr. Hopkins prematurely concludes that my observation, as to the most suitable point for effecting a communication between the Atlantic and Pacific oceans is not from personal examination. Who else ever examined the Rio Savana? I shall request the favour of the insertion of a few lines on this subject in your next paper, as I fear I trespass too much on this.—Edward Cullen, M.D.: *Upper Dominick-street, Dublin, May* 28.

MINE INSPECTION.

Sir,—The communications of your correspondent, Mr. David Mushet, are always interesting, and are entitled to the attentive consideration of your readers. His recent letters on Mine Inspection and Life Insurance bear ample evidence of his ability as a controversialist, and of his strong attachment to byegone customs and laws. "The signs of the times" too clearly indicate the early institution of an official inspection of mines to permit the existence of a doubt on the subject, and your correspondent is in despair. Strong, however, in "Conservative" principles, he derives great consolation from "the difficulties such a system would have to encounter;" and if an inspection be decided on, he is ready "to offer a modification of notions advanced three years since, with the object of mitigating, as much as possible, the form of the evil." He then adds (April 16)—"I think it is the duty of every one interested in this matter to contribute what they can towards checking the inconsiderate advocacy of those flowing writers, who flatter the public that the appointment of Government inspectors, and the extinction of danger, will be synonymous events." Now, Sir, however "false in principle" Government interference in commercial transactions may be considered by your correspondent and "the soundest heads" (nameless though they be), whose opinions he advances to corroborate his own, it must be admitted that it is a principle which has been long recognised, and extensively applied to our shipping, manufactures, and commerce. Admitting that it is attended with some individual inconveniences and inseparable evils, in common with most, if not all, restrictive laws, is no "sound" argument against its extension; for if the evils to be avoided by its adoption be greater than the evils consequent upon it, the interest of society imperatively demand such measures as will produce less amount of evil, and the greater amount of good. It would have been more satisfactory had your correspondent given the names of those "flowing writers" whom he mentions as having flattered the public, by stating that Government inspection, and the extinction of danger, will be synonymous events; and with all due deference to Mr. Mushet, his discretion may be fairly questioned, in quoting such "stark nonsense" on anonymous authority. There has been enough both said and written upon this subject to constitute a library of reference; there is no excuse, therefore, for giving us absurd notions on nameless authority. Unfortunately "the extinction of danger" in mines is a physical impossibility; but he must be either a bold or an ignorant man who will fearlessly assert that it is impossible to diminish the fatality and number of those appalling accidents which are constantly occurring in our mines. Disguise the matter as you may, the established, unequivocal, and indisputable fact is, that the destruction of human life in our mines is enormous, and it is equally true that it is possible very considerably to diminish it. The evidence given to the Parliamentary Committees in 1835 and 1849, the report of the South Shields Committee, the reports of Sir Henry De la Beche, Dr. Playfair, and Mr. Smyth, and the concurrent and able articles which have appeared in your columns, as well as in many other publications, have proved the existence of the evil, and proposed a modified system of inspection as the best remedy for it that can be devised. Yet, forsooth, because this remedy will "tread on the corns" of some antiquated prejudice, run counter to some cherished notions or abstract principles, and possibly cause some inconvenience, or annoyance, to the owners of mines, the lives of an industrious and valuable race of men are to be ruthlessly sacrificed!

In his communication of May 16th, your correspondent insinuates that the advocates for Government inspection are influenced by the selfish motives either of an unworthy ambition or pecuniary interest; and thus attempts to depreciate in public estimation the arguments and facts which they have adduced, and which he is either unwilling or unable to refute. It is to be regretted that so able a writer as your correspondent should have recourse to such a system, which is always more mischievous in its recoil than in its attack. A cause which numbers among its strenuous supporters such names as Nicholas Wood, Sir Henry De la Beche, Dr. Playfair, James Mather, Benjamin Biram, Joseph Roberts, George Elliot, Joseph Hume, Sir George Grey, Sir Robert Peel, Lord Ashley, Lord Wharncliffe, Lord Carlisle, and a host of others, whose great intelligence and purity of motives are equally unimpeachable, is beyond the reach of such assailants.

The recent explosion in Belgium, by which 79 lives were lost, is exultingly held up as a specimen of the results from Government inspection; and your correspondent (May 20th) sagely proceeds to refute a proposition that nobody but himself ever entertained. He says—"a great deal has been said, both in and out of Parliament, in favour of inspection in this country, *because* it is instituted abroad." To say the least of it, this is disingenuous; for your intelligent correspondent must know that it was not because "it is instituted abroad" that inspection was recommended to be adopted in this country; but it was *because* Government inspection had been attended with the most *salutary results* abroad that it was advocated here. It was never pretended that accidents can be altogether prevented either in Belgium or elsewhere by inspection; and that an explosion has occurred where such a system prevails is no proof of its inefficiency; but what is maintained is that, by the inspection, both the number and fatality of the accidents may be diminished. Because we are unable totally to eradicate this evil, are we to make no attempts to mitigate it? Are we to stand mute and unmoved whilst the lives of thousands are sacrificed to some fanciful crotchet or useless procrastination? The remedy proposed has been long practised on the continent; and Mr. Tremenheere was employed by our Government to inquire into the results of the systems established in France, Belgium, and Germany, upon which he emphatically reports, that "*inspection on the continent has tended to reduce the number of accidents materially.*" This is the deliberate assertion of a competent and disinterested witness, after a full and careful investigation. It is for an extension of a system which has worked so well that we contend—not because it happens to be a foreign system, but because it has been *proved* a good one.

As to the unfortunate accident in Belgium, to which your correspondent repeatedly alludes as to a fact condemnatory of inspection, and by which 79 lives were lost, we may best estimate its importance by referring to the statistical information we have (imperfect as it is) of the explosions which have occurred in our uninspected mines, and compare the one solitary instance quoted with three or four mines in England. It appears that 80 lives have been lost in Bensham Colliery—120 in the Felling, 205 in the Wall's-End, and 140 in the Jarrow Colliery. In four mines only, therefore, 545 lives have been lost by explosions. Can your correspondent produce an equal amount of fatality resulting from the same cause in any four mines in the world? If he cannot, then what becomes of the perfection of the present system?—or what advantage has it over that pursued in Belgium?

Notwithstanding the lingering opposition manifested by a few persons against this measure, it is satisfactory to know that it is making a steady progress in public opinion, and that many distinguished coal-owners who were hostile to it have become converts to it. The colliers themselves have become aware of its vast importance to their welfare, and are using their best energies to second the endeavours of others to procure for them that legislative protection to which they are entitled. Appended is a letter from Mr. Martin Jude, "the leading man and treasurer" of the colliers in the Newcastle district, and which appeared in the *Gateshead Observer* of the 18th inst., which is deserving of attention.

Neath, May 27. J. Richardson, C.E.

Sir,—The subject of legislative interference, in regard to the casualties so frequently occurring in collieries, has recently been laid before the Legislature and the Government, a deputation of coal miners from the principal mining districts having had an interview with Sir G. Grey upon that subject very recently. It unfortunately happens that the Government are still unprepared to submit any distinct measure to Parliament in connection therewith; and it is now upwards of three years since something by way of promise was held out to the miners, when their petition was presented by Mr. Duncombe in 1847, Sir G. Grey stating that the subject should receive their attention, &c.

During this interval there cannot have been less than 2000 lives lost by colliery accidents; and in the meantime a vast amount of official evidence and testimony has been recorded, of the desirability and necessity for some legislative supervision of mines; to crown which, the Report of Lord Wharncliffe's Committee last year, also adds extensive and conclusive evidence; yet with all these collateral and direct evidences, the Government still plead the necessity of waiting the Report of the Commissioners appointed last year to visit the various mining districts; which Report has been expected week after week since the present session opened. The truth is, the miners are tired of waiting so long for this especial boon, and would fain induce the Legislature to pass some adequate and efficient enactment, and that before this session of Parliament closes, calculated to protect their health and lives, at least to the greatest possible extent, in connection with their dangerous calling. It has, therefore, been resolved to endeavour to enlist the co-operation of the influential and the humane in all the large towns of this district, that the Minister may be induced to concede to the mining population a measure of supervision commensurate with that which obtains in factories, railways, steam-boats, and passenger-ships; and they fondly hope that the appeal will meet with a ready response from the electoral and influential body, whom they feel in duty bound to fall back upon, when their own efforts have not met with that success which they had anticipated.—M. Jude.

IRON FOR RAILWAY PURPOSES.

Sir,—What a strange compound is poor human nature, whether it is found in the shape of an "*un*-Civil Engineer," or "A Paid Railway Official." One home truth is very evident, that a mighty difference exists between our wounding the feelings of others, and being wounded ourselves. Some men can very calmly apply the lash to his fellow-man, and smile to himself while he contemplates his victim writhing under the mental pain he has inflicted; but let the lash be applied to his own back, and his piteous complaints betray that want of moral dignity, which *never wantonly* inflicts a mental wound—no, not on the meanest of the race.

Being by no means desirous of leaving myself on the debtor side of incivility in this rail affair, I would confine the few remarks I have to make to two of the disputed points contained in my last letter.

The first is the trials which the "opulent ironmaster's" patent rails have undergone.

The second is, whether the practice of making rails one-third lighter, and such rails wearing one-third longer, has been "converted into an established fact, by the experience of the last 10 or 12 years of engineers of at least equal eminence with myself?"

In reference to the first point, the "Paid Railway Official" has said "that a three years' test is by no means sufficient to accomplish this object"—that is, to determine the real merits of these rails, "and that such a period (viz., three years) is infinitely too short to justify the conclusions come to in reference to their merits."

We appear, however, to be agreed as to the means by which railway companies are to ascertain the best qualities of rails—that is, by a trial of the comparative durability of different descriptions of rails under the same circumstances. Now, *that trial has been made*. It is true it has only been a three years' trial; but *is it true* that rails laid down at the same time, in the same place, and subjected to the same wear, "and which cost, it may be, only 6*l.* per ton, are, to all appearance, equally good?" I will not be so uncivil as flatly to deny this, but I must have such proof of its correctness as will set aside the statements of more than one official connected with the Paddington station—viz.: that *none* of the rails which have been placed at various times in competition with the patent rails have exceeded the life of two years, and that some ended their days in considerably less time; and it is well to remark that a large portion of the patent rails—viz.: those which are marked T P, although made from No. 3 iron, would not cost more at the works than 7*l.* 10s. per ton.

There is no disposition to dispute the assertion of the "Paid Railway Official," that "rails of notoriously bad make have stood a four years' test equally well, or that many miles of rails of ordinary make have been in wear much longer, and are now in appearance equally good;" *but it is disputed* that these notoriously bad make of rails have been laid down at the Paddington station, in competition with the patent rails, and after four years of such a test, stand equally well. If so, I am sure the "opulent ironmaster" would be glad to have his mind disabused of the erroneous opinion he has formed of his own rail, by having these superior rails pointed out to him, which the "Paid Railway Official" is *bound* in *honour* to do, after what he has said. The "Paid Railway Official" is in error when he supposes that samples of these rails have only been sent to one railway company; there are samples laid down on other four or five railways to my knowledge, and it is gratifying to know, that in every case they are sustaining their character as *antilaminating rails*. The "Paid Railway Official" wishes I had taken the trouble to consult Mr. Dockray, of the London and North-Western Railway, on the average duration of life of an ordinary rail. I can assure the "Paid Railway Official" that there is no engineer whose opinion, on every subject connected with rails, I would respect more than Mr. Dockray's; and I am most happy in having his recorded opinion in connection with that of other engineers of eminence on the second point in dispute—viz.: that, "if rails were made one-third lighter, they would wear one-third longer." It would appear I had erred in giving the "Paid Railway Official" the credit of this discovery, for he states that "the practice and experience of the last 10 or 12 years of engineers of eminence has converted this (anomoly) into an established fact."

In May, 1849, there was published two reports on the deterioration of railway plant and road, by Mark Huish, general manager of the London and North-Western Railway Company. At page 5, after some remarks, illustrating the changes which had taken place in the speed of travelling, increasing traffic, and heavier engines, the report goes on to say—"That the original 35-lb. fish-bellied rail, as laid down on the Liverpool and Manchester line, increased to 62 lbs., then to 65 lbs., and then to 72 lbs., and 75 lbs. per yard—our last new rails being 82 lbs. and 85 lbs. per yard."

At page 8, it is further said—"And as all our experience would show us that the life of our old light and inefficient rails, with wide bearings, and small chairs, will average at least 15 years, we may fairly assume that the infusion of 180½ miles of a *heavier* and better kind of rail, laid, too, with shorter bearings, and in a more firm and approved manner, will justify us in regarding the average life of our present road as at least 20 years. From these statements, the established fact appears to be, according to the eminent engineers whose names are appended to this report, that by making the new rails more than one-half heavier than the old light rails referred to, and 30 per cent. heavier than many of the rails now in use, they will wear but one-fourth longer." *So far*, the opinion, "one-third lighter, and one-third longer wear," *is not sustained*.

At the close of the report, there are letters from two of the most eminent engineers of the day. One is from Mr. Robert Stephenson, who, after some remarks on the two systems of laying rails, observes—"I am unable to say that any better plan of permanent way exists, than that followed in laying down your present 82-lb. rail." In Mr. Joseph Locke's letter on the same subject, the following paragraph appears:—"I do not think it necessary to discuss the question of weight, although I understand that some persons think *it is not necessary to go beyond* 75 lbs. to the yard; but as I am of opinion that the mode of fastening and laying is far more important than the mere weight of a rail, which may vary according to the market price of iron, and the fancy of individuals, I shall content myself by merely referring to the enclosed sketches, one of 80 lbs. to the yard, which has recently been adopted by the London and South-Western, and to another of 90 lbs. to the yard, now making for the northern section of your line." We then have the joint report of these two engineers on the *weight* and form of rail. In the closing paragraph of their letter, dated 21st April, 1849, they say—"We recommend the board to continue the double-headed rail about 85 lbs. to the yard."

I now leave the subject for the calm consideration of the "Paid Railway Official," trusting that in his endeavour to establish his own position, and overturn the facts contained in this letter, he will furnish your readers with something more than mere assumptions, which at the present day are not found sufficient, on which to establish practices of so much importance, as those now under consideration.—Civil Engineer: *London, May* 30.

LATTICE VIADUCT ON THE WATERFORD & KILKENNY RAILWAY.

Respected Friend,—I observed, in your last Journal, an account of an extensive viaduct, or bridge, upon the "lattice" principle, erected near Thomastown, in Ireland, designed and erected by Capt. W. Moorsom, at a cost of 15*l.* per foot run. I wonder it did not occur to him to adopt the under-suspension, as a cheaper and more durable plan, equally stable, and affording, in my opinion, greater positive security, which could have been effected for not exceeding 10*l.* per foot, or with an iron beam at from 12*l.* to 13*l.* per foot; so composed, it is probable that it would be 10 times more durable, besides requiring *much less annual repairs*. When Capt. Moorsom was engineer to the Gloucester and Birmingham Railway, I solicited his attention to such constructions, as I had previously done that of G. Stephenson in 1830—both of whom most highly approved the soundness and economy of the principle; and I made a model on the scale of 2 in. to the foot, representing a 50-ft. bridge, and took it to Gloucester, for his (Capt. Moorsom's) inspection, which identical model I have deposited at your office. He expressed himself perfectly satisfied with it; and regretted that all the bridges required on that railway were either erected or under contract, or he should have felt a pleasure in adopting it.

I am not aware that he or any other engineer of railways have done so; but I am at a loss to imagine why it has not been introduced, unless that it is considered too simple in its combination to be deserving the attention of the highly-gifted and talented eminents; which reminds me of an anecdote once related to me of a person who was complaining of the badness of the times; and observing that all the ministers of various religions appeared to live in *great comfort*, he hinted to his friend that he was almost inclined to start a new religious sect; when his friend replied, "if you think seriously on that matter, allow me to give you some advice—viz.: in arranging your creeds and doctrines, take great care to exclude reason and common sense, otherwise you will not succeed; because if you tell people that they ought to do to others as they would that others should do to them, and that they must love each other, they will probably reply, these are Chinese maxims, confirmed by reason and common sense, which *we already know*; we want to be told, or informed of, what we do not know or understand." Is it, therefore, that the under-suspension principle is so simple that it does not afford an opportunity of displaying complex engineering contrivances for exciting the wonder and admiration of the ignorant, or uninformed multitude, which has, unfortunately for shareholders, been suffered to prevail to a large and ruinous extent; or is it because most people like their own children best, and are, therefore, unwilling to adopt the offspring of others? Thomas Motley.

Stangate, Lambeth, 5 *mo.*, 28.

P.S.—I am glad to find your intelligent correspondent, "Engineer of the Next Generation," admits the soundness of the principles of under-suspension.

AGRICULTURAL PRIZE ESSAYS.

Sir,—Although your Journal is not professedly an *agricultural* journal, yet it is within its province to notice those parts of science which bear upon the practice of husbandry. I will, therefore, call your attention to the fact that two prize essays, written by Messrs. Karkeet and Whitley, of Truro, were the best in the estimation of the Royal Agricultural Society of England, who awarded to the former gentleman 30*l.* for an essay on the diseases of cattle and sheep, caused by mismanagement, and to the latter 50*l.* for an essay on the climate of Great Britain, in its effect on cultivation. To give honour to those writers, the Probus Farmers' Club, of which they are members, or the keeper of the Red Lion Hotel, Truro, proposed that the essayists should be invited to a public dinner at that hotel, which took place on Friday, the 17th inst., and was attended by about 80 persons. After the usual patriotic toasts had been given, the healths of Messrs. Karkeek and Co. was drunk with enthusiasm. Mr. Karkeek returned thanks in a neat speech, which was followed by a speech from Mr. Whitley, both, of course, of a very thankful character. On the latter I will make a few remarks, which were suggested on reading a report of it given in the *West Briton*, but first I will give a few extracts from the speech. He says—"I have great pleasure, in the first place, in acknowledging the obligation I owe to the Probus Farmers' Club."—2. "I beg also to express my obligations to the Royal Institution of Cornwall."—3. "I am indebted also to the talented and able secretary of that institution, Mr. Tweedy."—4. "Dr. Barham has also furnished me with a great deal of valuable information."—5. "In the next place I am indebted to the chairman."—6. "Mr. Henry Gatley was also kind enough to give me some very valuable information."—7. "I am also indebted to Mr. Karkeek."—"As to myself I am not the *hero* your chairman has said. I possess little talent, but I have laboured hard in this matter."—"I have not written to gain the victory; it has been no *gladiatorial fight* between me and the other gentlemen engaged in this matter."

One would have supposed that something very great had been accomplished, after hearing all the sources of information so thankfully quoted—no less than seven being named in his speech—but we find after all the helps afforded, and all the hard labour devoted, that it is merely *an essay*. Had the production been an English dictionary, or a voluminous work on science, or on history, eclipsing in value all others now extant, the allusions to so many sources would be less remarkable. "I possess little talent" says he. There is a great deal of mock humility, as well as mock poverty, in the world, which can be detected very easily. There is little sincerity, but much truth sometimes, in men speaking thus of themselves. They do not really mean it. Prove it thus (not at the *same time* that they call themselves so little in their own eyes, but sometime after), by saying that you really think their knowledge very little on the subject mentioned, and that they have "little talent." Instantly will they start up in a rage, and very likely show you the door, as a gentleman did to a friend of mine in Truro some years ago, who took the liberty to tell him that a certain book written by him was a *compilation!* "No gladiatorial fight!"

it appears that the writer was so intrepid as to write his essay without rrying a *sword*. How daring! He says, finally, that of the compliment d him he was "utterly unworthy." *Query*, does he *think* so? As these e prize essays, I should like to know how many competed for the re- ctive premiums so bestowed. This piece of information is withheld. may be that there were *very few* competitors, or none at all. J. R.

Redruth, May 27.

ON THE PURIFICATION OF GAS.

SIR,—Your valuable Journal of Saturday last contains a letter from M. Cavaillon, of Paris, complaining of the use of sulphate of lime by Mr. ming in the purification of coal-gas. In that letter, M. de Cavaillon ims, under his patent, of the date of August 1st, 1849, the exclusive ht of employing sulphate of lime from whatever process it may have en obtained, and charges Mr. Laming with infringing his patent right. aving Mr. Laming to take care of himself, which he is, doubtless, well le to do, allow me to inform M. de Cavaillon that sulphate of lime has en used in this country for the purification of coal-gas long before the e of his patent; such being the case, his objections are untenable.

Before concluding this letter, allow me to call the attention of M. de vaillon to a fact which can admit of no disputation. In his patent of vember 4th, 1847, Mr. Laming claims the use of *a mixture of oxide and phate of lead* for the purification of gas; and, in his patent of Aug. 1st, 49, M. de Cavaillon claims the use of *a mixture of oxide and sulphate of d* for the same purpose. Now, who is the infringer of patent right in s case? I do not for a moment suppose that M. de Cavaillon was are of the prior claim of Mr. Laming to the use of the mixture above- ntioned. Two things, however, may be learnt from this fact—the one t it is highly important for intending patentees to inform themselves of processes which others have previously employed or patented; and other lesson is, that those who accuse others of infringing their rights uld see to it that they themselves are blameless. VERITAS.

May 29.

ON THE PURIFICATION OF GAS.

SIR,—M. de Cavaillon, from Paris, addressed to your Journal of last ek a letter, in which he "protests, with all the strength of his right," ainst my using sulphate of lime for purifying coal gas, and eulogises the pect which Englishmen entertain for the "sacred rights" of inventors. es M. de Cavaillon excuse himself on the score of *not* being an English- n for borrowing, from my specification (by French leave), those me- ic additions which alone can make sulphate of lime valuable? But my ect in addressing you, Sir, is not to stigmatise a foreigner for wishing do what more than one of my own countrymen have not scrupled to empt, but rather to show him that the strength of *right*, which he thinks been conveyed to him by a patent dated August 1, 1849, is perfect akness; for not only am I protected in the use of sulphate of lime by a ent nearly two years older than his, but I can show him in a London rnal a publication of the process, by Mr. Lewis Thompson, anterior to application to the Patent-office, and even prove its public adoption long fore the date of his alleged right.

The knowledge which I have of M. de Cavillon, has taught me that of men he is one of the last to be *convinced against his will*; and certainly will not *will* to come into possession of such knowledge respecting his *t* in England as I offer him. With a previous publication before his s of this same process in the *Moniteur Industriel*, he was last year non- ted in an action which he brought against Mr. Mallet for infringement t—the verdict recorded against him being "M. Cavaillon *n'est pas in- teur de ce procédé*."

The facts which I have cited will, at all events, convince your readers t M. Cavaillon's claim to the exclusive use of sulphate of lime for pu- ying gas is no more valid on this than on the other side of the Channel; I know they will fail in having any weight with that gentleman him- .—RICHARD LAMING: *Isle of Dogs, May* 30.

THE SOUTH COAST OF ENGLAND.

Under this title, a pamphlet has just been published by Effingham Wilson, yal Exchange, suggesting the means of preserving life and property, and of moting European trade, by the more general use of Southampton and other ts of the south coast, and the more perfect adaptation of the railway system England to the purposes of commerce. Elsewhere will be found a notice of communication which has been made to the Commissioners of Railways, on subject of an omission which exists of only a few miles of rails which would e united all the seaports of the island, have vastly facilitated the commerce the kingdom, and have greatly improved the interests of the railway com- ies themselves. The pamphlet under notice is written with the same view, so clearly does it establish the deductions arrived at, that on perusal the y feelings are those of astonishment, that not only the London and South- pton, but all the principal railways out of London, should have so long ne- cted a scheme so certain to advance their interests, and an impression that e extraordinary private interests and vested rights are at work to interfere h the accomplishment of this great public good. All the facts of the case, par- ularly the evidence given before a committee of the House of Commons in 1834 the bill for making a railway from London to Southampton, are so conclu- , that comment would be useless; we, therefore, proceed to give some ex- cts, and thus allow the author to speak for himself. To show what is re- rred of the company, he observes:—

hat railway transit is capable of being made instrumental, in a very high degree, to preservation of life and property, is most evident, for the conclusion is inevitable, were ships now passing to the eastward of the Isle of Wight, to make Southampton r port of arrival and departure, the calamities at sea, so far as regards the trade of ope with the countries situate in southern latitudes, including a large proportion of ish commerce, would be most materially alleviated. And the means of attaining e great objects, the preservation of life and property, are in strict accordance with the irements of commerce, economically considered, since, at Southampton, ships and r cargoes can be received at very low rates of charge; and merchandise deposited at port would command a wider and more general commercial range than at any other opean port of deposit, comprehending, indeed, all the markets of the world; the rkets of the British Isles, the markets of the north of Europe, the markets in the h, in the east, in the west; with the least conceivable maritime impediments, and, sequently, of expense, incidental to the arrival and departure of the ship. The obser- on applies with equal force to the collection of goods for export, whether produced his or other nations. To facilitate objects so important, the natural and great mari- e resources of Southampton water have been improved, by the expenditure of more half a million of money, in a dock of the most admirable description, accessible at times of tide (with capacious dry docks on the margin), to and from which the rail- trucks run; constituting a most perfect railway terminus at the ocean itself, and ch might be equalled by a terminus at the Thames, at London Bridge, the site for ch already belongs to the railway company. What then is wanting to complete this, most interesting, important and desirable commercial combination in the world? ply the developement of the resources of the London and South-Western Railway:— y reasonable and moderate rates of carriage for merchandise.—2. The encourage- t of water carriage to and from the company's wharf at Vauxhall.—3. An extension ss than one mile from Waterloo station to London Bridge, for which an Act of Par- ent was obtained several years since.—4. A work of trifling cost, to connect the rail- with the Grand Junction Canal at Brentford.—5. The interjection of a few miles of way, to connect the South-Western, or its branch at Brentford, with the North- stern and other railways.

After describing the small junctions necessary for the union of all the me- politan lines, which will be also found in the article in another column, to ch we have alluded, and taken a review of the immense loss of life and sure in the Straits of Dover and other parts of the Channel, the latter ounting to at least 600,000*l.* a year, exclusive of the unrecorded loss of ves- foundered at sea, he says:—

outhampton water, deep, capacious, situate in the centre of the sea-board of England, ed with docks of a superior description, with the capacity of affording every variety accommodation that the merchant or shipowner can desire; light in its charges, easy ngress and egress; pre-eminently calculated to render this country the emporium of ish commerce, is, in effect, closed against the general purposes of trade, by the in- acity imposed upon itself by the London and South-Western Railway Company, in e of great responsibilities and important duties, undertaken at their own solicitation ore the two Houses of Parliament and the world, and at a vast expense, in contending h rival or opposing claims.

After giving verbatim some of the evidence taken before the committee of e House of Commons, he says—

ith this, let the considerations of the one mile of railway, to carry on merchandise passengers to London Bridge, and of about nine miles more, to connect the northern southern groups of railway, be combined, and the conclusion is irresistible, that the uth-Western Railway proprietary have obtained powers from the Legislature, *which y so use as to paralyse the very object for which those powers were asked for and confided em.* That Southampton would be freely resorted to as a most superior commercial rt, has been well ascertained by recent diligent inquiry; and that the South-Western lway would be freely employed for the transport of goods, is past doubt, and in pro- tion to the compliance with the conditions required; these conditions being—1. The ering of the rates of carriage of merchandise to a commercial level.—2. The en- angement of water-carriage to and from the wharf at Vauxhall.—3. The extension of rail from Waterloo station to London Bridge.—4. The appropriation of the ground in immediate neighbourhood of London Bridge to vaults and warehouses for the deposit goods, much of this ground being understood now to belong to the company.—5. The nection of the rail at Brentford with the Grand Junction Canal, and its extension ough Southall to the North-Western at Harrow. Sad indeed is it to reflect that ough the denial of these facilities, the opening of one of the finest ports and the best ate for commerce, in the greatest commercial country in the world, should have n prevented.

The author thus concludes:—

ow much longer are these great works, great in purpose, yet small in expense, and easy of execution, to be delayed? How long are the dictates of humanity to be resisted, the great interests of this nation to be counteracted or neglected, and the more general interests and claims of commerce, affecting all nations, to be allowed to remain in a state of check and obstruction discreditable to the country.

THE COAL TRADE.

[The following communication has been addressed to Thomas Littledale, Esq., Chairman of the Liverpool Dock Committee, by William Laird, Esq.]

SIR,—In the following remarks on the quality of coal raised in each district, I should wish you to bear in mind that the results, as regards Lancashire, has been obtained from experiments made on coal chiefly raised in the St. Helens coal-field, and that had the same experiments been made on coal from the neighbourhood of Wigan, the result would, doubtless, have been still more favourable. In July next the commissioners' report on coals from the Wigan district will be published, when I hope to be able to prove from authority what I now only give as my private opinion. With these preliminary remarks, I proceed to a comparison of the two coal-fields as to quality.

In 1845 the Lords Commissioners of the Admiralty, on the suggestion of Joseph Hume, Esq., M.P., appointed a commission to inquire into "the comparative values of British coals for steam purposes." The commissioners to whom this important inquiry was intrusted were Sir Henry T. De la Beche and Dr. Lyon Playfair—authority being granted those gentlemen to appoint such scientific or practical assistants as they might deem necessary to superintend different branches of the inquiry. Two reports, entitled "Reports on the Coals Suited to the Steam Navy," have been presented to both Houses of Parliament by the commission; a third will follow in course of the present year.

Finding that no practical result could be obtained by mere laboratory research, the commissioners determined to test each variety of coal on a scale of sufficient magnitude "to check the theoretical views by the practical results."

For this purpose a building and boiler were purposely erected at the College of Civil Engineers, Putney, and the results there obtained, checked by further experiments made on the pumping-engine of Par Consols Mine, Cornwall—an engine of 80-horse power, with a 12-feet stroke, worked by two boilers, each 32 feet long by 6 feet 3 inches diameter. In giving these details, I wish to show the fair mode in which these experiments were conducted, and that the following tables, founded on the reports of the commissioners, are compiled from unexceptionable practical data; but if you will refer to the reports themselves, you will there find full details of every experiment, and plans of the apparatus employed. The commissioners sum up the result of their experiments, by stating that the true practical value of coals for steam purposes depends upon a combination of the following quantities:—1. That the fuel should burn so that steam may be raised in a short period, if this be desired; in other words, it should be able to produce a quick action.—2. It should possess high evaporative power; that is, be capable of converting much water into steam, with a small consumption of coal.—3. It should not be bituminous, lest so much smoke be generated as to betray the position of ships of war, when it is desirable that this should be concealed.—4. It should possess considerable cohesion of its particles, so that it may not be broken into too small fragments by the constant attrition which it may experience in the vessel.—5. It should combine a considerable density with such mechanical structure, that it may easily be stowed away in small space; a condition which, in coals of equal evaporative values, often involves a difference of more than 20 per cent.—6. It should be free from any considerable quantity of sulphur, and should not progressively decay, both of which circumstances render it liable to spontaneous combustion.

For the several degrees in which the coals of Durham and Northumberland and Lancashire approximate to this standard, I refer you to the following tables carefully compiled from Report No. II., dated May 24, 1849:—

FIRST REQUIREMENT.—The fuel should burn so that steam may be raised in a short period, if this be desired; in other words, it should be able to produce a quick action:—

	Fire lighted.	Steam up.	Time.
LANCASHIRE COAL.			
Balcarres' Arley	8h 45m	9h 0m	15m
Blackley Hurst	9 25	9 45	20
Blackbrook Little Delf	9 40	10 5	25
Rushy Park Mine	9 25	9 40	15
Blackbrook Rushy Park	8 35	8 50	15
Johnson & Worthington's Rushy Park	8 50	9 0	10
Laffak Rushy Park	9 30	9 50	20
Balcarres Haigh Yard	8 20	8 40	20
Cannel (Wigan)	9 30	9 40	10
Balcarres' Lindsay	9 40	10 0	20
Ditto Five Feet	8 0	8 15	15
Johnson and Worthington's Sir John	8 30	8 40	10
NEWCASTLE COAL.			
Andrew's House, Tanfield	8h 30m	8h 50m	20m
Newcastle Hartley	10 30	10 50	20
Hedley's Hartley	9 35	9 55	20
Bates' West Hartley	9 10	9 30	20
Buddle's West Hartley	9 30	9 50	20
Hasting's West Hartley	9 15	9 3	15
Carr's Hartley	8 35	8 55	20
Davison's West Hartley	9 40	10 0	20
North Percy Hartley	8 40	9 5	25
Haswell Coal Co., Steam-boat Wall's-E.	9 30	9 50	20
Derwentwater's Hartley	9 0	9 35	35
Original Hartley	9 30	9 55	25
Cowpen and Sidney's Hartley	9 55	10 15	20

Average time occupied in raising steam from 12 samples of Lancashire coal, 16 *m.* 15 *s.*
Average time occupied in raising steam from 13 varieties of Newcastle coal, 21 *m.* 32 *s.*
Gain in favour of Lancashire coal, 5 *min.* 17 *sec.*

SECOND REQUIREMENT.—It should possess high evaporative power; that is, be capable of converting much water into steam, with a small consumption of coal:—

Lancashire Coal.	Economic evaporative power.*	Newcastle Coal.	Evaporative power.*
Balcarres' Arley	8·83	Andrew's House, Tanfield	9·39
Blackley Hurst	8·81	Newcastle Hartley	8·23
Blackbrook Little Delf	8·29	Hedley's Hartley	8·16
Rushy Park Mine	8·08	Bates' West Hartley	8·04
Blackbrook Rushy Park	8·02	Buddle's West Hartley	7·82
Johnson & Worthington's Rushy Park	8·01	Hasting's Hartley	7·77
Laffak Rushy Park	7·98	Carr's Hartley	7·71
Balcarres' Haigh Yard	7·90	Davison's West Hartley	7·61
Cannel (Wigan)	7·70	North Percy Hartley	7·57
Balcarres' Lindsey	7·44	Haswell Coal Company, Steam-boat Wall's-End	7·48
Ditto Five Feet	7·21	Derwentwater's Hartley	7·42
Johnson and Worthington's Sir John	6·32	Original Hartley	6·82
		Cowpen and Sidney's Hartley	6·79

Average number of pounds of water evaporated from Lancashire coal, 7·882.
Ditto ditto from Newcastle, 7·754.

* Economic evaporative power, or number of lbs. of water evaporated from 112°, by 1 lb. of coal.

I pass over the third condition as one that heretofore no coal found either in the Newcastle or Lancashire coal-field has complied with.

FOURTH REQUIREMENT.—Coal should possess considerable cohesion of its particles, so that it may not be broken into too small fragments by the constant attrition which it may experience in the vessel:—

Lancashire Coal.	Cohesive power of coals.*	Newcastle Coal.	Cohesive power of Coals.*
Cannel (Wigan)	95·0	Hedley's Hartley	85·5
Johnson & Worthington's Sir John	82·0	Original Hartley	80·0
Blackbrook Rushy Park	80·5	Buddle's West Hartley	80·0
Balcarres' Haigh Yard	80·0	Haswell Coal Company, Steam-boat Wall's-End	79·5
Ditto Arley	76·0	Newcastle Hartley	78·5
Laffak Rushy Park	75·5	Carr's Hartley	77·5
Balcarres' Lindsay	70·0	Davison's West Hartley	76·5
Johnson & Worthington's Rushy Park	69·0	Hasting's Hartley	75·5
Rushy Park Mine	67·0	Cowpen and Sidney's Hartley	74·0
Blackley Hurst	65·0	Bates' West Hartley	69·5
Blackbrook Little Delf	61·5	Derwentwater's Hartley	63·5
Balcarres' Five Feet	44·5	North Percy Hartley	60·0

Average power of cohesion in Lancashire coal is represented by the figures 72·16.
Ditto ditto Newcastle, 75.

* Cohesive power of coals—*i. e.*, per centage of large coals.

FIFTH REQUIREMENT.—It should combine a considerable density with such mechanical structure that it may easily be stowed away in small space; a condition which, in coals of equal evaporative values, often involves a difference of more than 20 per cent.:—

Lancashire Coal.	Space occupied in store in cub. ft.	Newcastle Coal.	Space occupied in store in cub. ft.
Rushy Park Mine	47·65	Davison's West Hartley	46·96
Blackley Hurst	46·66	Carr's Hartley	46·86
Cannel (Wigan)	46·37	Cowpen and Sidney's Hartley	46·76
Balcarres' Five Feet	45·71	Hasting's Hartley	46·18
Johnson & Worthington's Rushy Park	44·80	North Percy Hartley	45·62
Ditto Arley	44·35	Original Hartley	45·62
Ditto Haigh Yard	44·13	Haswell Coal Co., Steam-boat Wall's-End	45·25
Blackbrook Little Delf	43·92	Derwentwater's Hartley	44·44
Balcarres' Lindsay	43·83	Newcastle Hartley	44·35
Johnson and Worthington's Sir John	43·41	Bates' West Hartley	44·13
Laffak Rushy Park	42·58	Buddle's West Hartley	44·09
Blackbrook Rushy Park	40·50	Hedley's Hartley	43·07
		Andrew's House, Tanfield	42·99

Average space occupied by Lancashire coal equals 44·491 cubic feet.
Ditto ditto Newcastle coal equals 45·101 cubic feet.

SIXTH REQUIREMENT.—It should be free from any considerable quantity of sulphur, and should not progressively decay—both of which circumstances render it liable to spontaneous combustion:—

Lancashire Coal.	Sulphur.	Newcastle Coal.	Sulphur.
Johnson & Worthington's Rushy Park	2·71	Bates' West Hartley	1·85
Balcarres' Five Feet	2·09	Hedley's Hartley	1·78
Blackbrook Rushy Park	1·62	Newcastle Hartley	1·69
Johnson and Worthington's Sir John	1·54	Original Hartley	1·44
Balcarres' Lindsay	1·51	Davison's West Hartley	1·38
Balcarres' Haigh Yard	1·48	Derwentwater's Hartley	1·37
Cannel (Wigan)	1·43	Hasting's Hartley	1·35
Blackley Hurst	1·43	Andrew's House, Tanfield	1·32
Laffak Rushy Park	1·39	Haswell Coal Company, Steam-boat Wall's-End	1·21
Blackbrook Little Delf	1·07	Buddle's West Hartley	1·04
Balcarres' Arley	1·05	Carr's Hartley	0·82
Rushy Park Mine	1·01	North Percy Hartley	0·78
		Cowpen and Sidney's Hartley	0·71

Average amount of sulphur in Lancashire coal is represented by 1·528.
Ditto ditto in Newcastle by 1·287.

An abstract of the foregoing tables gives the following as the average result of experiments made on 13 varieties of Northumberland and Durham, and 12 varieties of Lancashire coal:—First requirement, getting up steam quickly: With Lancashire coal the time occupied was 16 min. 15 sec., with Northumberland and Durham, 21 min. 32 sec.—result in favour of Lancashire coal. Second requirement, power of converting much water into steam with a small consumption of coal: Lancashire coal evaporates from 1 lb. of coal, at 212° heat, 7·882 lbs. of water; Northumberland and Durham, 7·754—result in favour of Lancashire coal. Third requirement, absence of smoke: No description of coal yet experimented on, except anthracite, complies with this requirement. Fourth requirement, cohesive power: The per centage of large coal in Lancashire coal is represented by 72·16, and that of Northumberland and Durham by 75·0—result in favour of Northumberland and Durham coal. Fifth requirement, space occupied for freight: One ton of Lancashire coal only occupies a space equal to 44·491 cube feet; while the same quantity of Northumberland and Durham coal will occupy 45·101 cube feet—result in favour of Lancashire coal. Sixth requirement, sulphur in coal: The quantity contained in Lancashire coal may be represented by the figures 1·528, while that contained in Northumberland and Durham coal may be represented by 1·287—result in favour of Northumberland and Durham coal.

Upon the combination of these six qualities, in a greater or less degree, in any particular kind of coal, depends its character and value for steam purposes; but the commissioners themselves allow* that their standard is ideal, and that "all these qualities are never found united in one coal." They give, as an example of the difficulty of meeting with a perfect specimen, "Anthracite coal, which possesses very high evaporative power, but, not being easily ignited, is not suited for quick action; which has great cohesion in its particles, and is not easily broken by attrition, but, not being a caking coal, would not cohere when the ship rolled in a gale of wind; which emits no smoke, but, from the intensity of its combustion, causes the irons of the bars and boilers to oxidate, or waste away rapidly."

An approximation to the commissioners' standard is, therefore, all that can be fairly asked for; and it is gratifying to find that, out of five requirements applicable to both descriptions of coals, the third requirement, "absence of smoke," being one in which both fail, Lancashire carries away the palm in three—namely: first, in getting up steam quickly; second, in quantity of steam raised from 1 lb. coal; third, in economy of space for freight: while on two points, namely, cohesive power (large coal), and comparative freedom from sulphur, the coal of Northumberland and Durham is superior.

In addition to the tables of economic value of coals, from which the above results are taken, the commissioners give a detailed description of the peculiar character of each kind of coal experimented on, the substance of which I annex in a condensed form. You will find it at length in appendix to second report, under the head of "General Observations," made during three days' experiments of eight hours each day:—

LANCASHIRE COAL.—Balcarres' Arley: Lights easily, burns freely, considerable quantity of ash, no clinker, after eight hours' trial. Blackley Hurst: Slightly bituminous, rather fragile, yields much smoke, and deposits a considerable amount of soot, leaves little ash or clinker. Johnson and Worthington's Rushy Park: Lights easily, burns clearly, blows off much steam, evolves much smoke on lighting or stirring the fire, produces little clinker or ash, and contains little or no iron pyrites. Rushy Park Mine: Lights easily, blows off a considerable quantity of steam, makes a clear fire, leaves little ash or clinker, evolves considerable quantities of greyish smoke. Blackbrook Rushy Park: Lights easily, gets up steam rapidly, yields much smoke on lighting and stirring fire, though with careful stoking this may be avoided, a quantity of ash and clinker made, the latter attaching itself firmly to fire-bars. Blackbrook Little Delf: No distinct difference between this and Blackbrook Rushy Park, except that of the two this appears to yield most smoke. Laffak Rushy Park: Lights easily, burns clearly, produces little clinker, evolves much smoke, particularly after charging or stirring the fire. Johnson and Worthington's Sir John: Lights with difficulty, requires a strong draught, fire-bars choked with ash and clinker. Cannel (Wigan): Lights readily, gets up steam very quickly, evolves large quantities of dense black smoke, leaves a very large amount of cinder and red ash, with a considerable weight of a very fusible clinker, which melted in the bars and obstructed the draught. Balcarres' Lindsey: Burns steadily, blows off steam rapidly, after a certain time bars get partially choked by a brittle whitish clinker, gives off much smoke during combustion. Balcarres' Five-feet: Lights readily, blows off steam rapidly, gives a hard clinker, which adheres so firmly to the bars as to interfere materially with the maintenance of a clear fire, evolves much smoke, and leaves a good deal of ash. Balcarres' Haigh Yard Mine: This coal resembles the two last specimens described, and burns in a very similar manner, but less rapidly and more steadily, clinker small in quantity, extremely fusible, melting on the bars, obstructing draught.

NORTHUMBERLAND AND DURHAM COAL.—Andrew's-house Tanfield: On the fire the coal agglomerates and chokes the draught, requiring much care in stoking to keep up the steam, and appears much better adapted for coke-making than steam purposes. Newcastle Hartley: Lights with difficulty, requires a strong draught to carry on combustion economically, evolves a large quantity of smoke, a considerable quantity of white ash left, the clinker is brittle, does not adhere to the fire-bars. Hedley's Hartley: Lights readily, generates steam slowly, and requires a quick draught to produce even a tolerable fire, the fire-bars are choked after a few hours with large quantities of cinders and white ash, the fire requires frequent stoking and constant attention to keep up the steam. Bate's West Hartley: Burns like the other Hartley coals, giving off much smoke, and depositing large quantities of soot, produces little ash or clinker. Buddle's West Hartley: Burns freely, blows off the steam rapidly, requires little trouble to maintain a good fire, requires a quick draught. Hasting's Hartley: In general features resembles North Percy Hartley, but contains less iron pyrites, with careful stoking yields a good fire, but evolves little smoke during combustion. Carr's Hartley: Lights easily, burns freely, blows off steam rapidly, evolves much smoke, deposits much soot in flues, produces large quantities of white ash, causing considerable attention on the part of stoker to prevent clogging of grate and stoppage of draught, amount of clinker not large. Davison's West Hartley: Lights easily, burns freely, evolves considerable smoke, forms little ash or clinker. North Percy Hartley: Lights easily, burns freely, leaves considerable ash but little clinker, makes much smoke, when fire doors are open a distinct odour of sulphur perceived, generates steam rapidly. Haswell Coal Company's Steam-boat Wall's-End: Lights easily, burns freely, does not generate steam rapidly, produces large quantities of white ash, speedily choking fire and impeding draught, evolves much smoke, leaves little clinker on the bars. Derwentwater's Hartley: Lights easily, blows off steam rapidly, requires little stoking, leaves little ash, clinker, or cinder, but like all other coals from the north of England, gives off much smoke during combustion. Cowpen and Sidney's Hartley: Lights easily, burns freely, but not so much so as Davison's West Hartley, evolves considerable smoke, forms little ash or clinker.

Taking these detailed reports in connection with the tabular statements of economic values, will, I think, prove satisfactorily to you, Sir, or any unprejudiced person, that the coal raised in this county is not inferior in quality to any got in Northumberland or Durham.

Considering the neglect with which this important branch of trade has been treated, future trials will doubtless show results still more favourable as regards this particular locality; the attention of those interested having been drawn to the importance of the experiments made by the commissioners, to the combination of qualities required in coal for steam purposes, and to the influence which the publication of these reports will have on foreign orders, parties abroad naturally attaching great value to any official document emanating from a commission appointed by Parliament. WILLIAM LAIRD: *Liverpool.*

THE WORKS AT NEW HOLLAND.—These works will be soon completed, the first tube, which is for passengers ascending from the pontoon to the platform, was lowered and finally completed last Monday. The weight of this tube is upwards of 80 tons; it is 140 feet in length, and has been executed by Messrs. E. B. Wilson and Co., of Leeds, under the superintendence of Mr. W. Cammell. The other tube, which will be used for cattle and carriages, will be ready by the middle of next month. There are also erecting two hoists, which work between the tubes, and are for lifting and lowering the luggage from the platform to the pontoon; so that when the passengers leave the carriages they have nothing to do but walk down the tube to arrive at the boat, and will find all their luggage on the boat before them, and without any trouble on their parts. This landing place will be one of the finest in the world, when completed, which will be in about six weeks or two months.—*Hull Advertiser.*

* Page 17, First Report.

New Patents.

[From the *Mechanics' Magazine* of this day.]

SPECIFICATION ENROLLED DURING THE PAST WEEK.

FRANK CLARK HILLS, Deptford, Kent, manufacturing chemist: For an improved mode of compressing peat for making fuel or gas, and of manufacturing gas, and of obtaining certain substances applicable to purifying the same.

1. The peat-compressing apparatus of Mr. Hills consists of two troughs, with gratings for bottoms. Above each of these gratings there is laid a quantity of coarse gravel, or other filtering medium, of a size sufficiently large not to pass through the openings, and above that successive layers of finer gravel, and, last of all, one of sharp-pointed sand. A sheet of perforated metal is placed above the last layer of sand, and supported on cross bars, to prevent it from giving way under pressure by the subsidence of the sand and other filtering media. The upper part of the trough is furnished with a cover, bolted to the edges, or kept down by a weighted lever, and the filtering medium is placed in the trough up to a certain point only, in order that there may be a space between the cover and the perforated plate, in which a plunger travels to and fro. The size of the outlet of the trough is regulated by means of two adjustable plates or rollers, for the purpose of regulating the pressure to which the peat is to be subjected. The open ends of the two troughs are placed opposite one another, and their respective plungers are attached to either side of a slotted plate, in which works a crank shaft, driven from a steam-engine, or other prime mover, so that at each revolution one of the plungers will be driven forward and the other drawn back. Each trough is provided with a hopper, filled with peat. When the plungers are drawn back, a supply of peat falls down, which at the next stroke is propelled towards the contracted outlet, and so on at each forward stroke of the plunger, until the whole of the moisture is driven through the perforated plate and filtering media, and the solid matters are expelled from between the adjustable plates or rollers in a dry and compressed state.

2. The improvements in "purifying" gas consists in depriving it of its sulphuretted hydrogen, cyanogen, and ammonia by passing it through the sub-sulphates of iron, oxychloride or the hydrated or precipitated oxides of iron, either alone or combined with sulphate of lime, sulphate or muriate of magnesia, baryta, strontia, soda or potash, and mixed with sawdust, breeze, or other absorbent material, which will allow of the passage of gas through it. The hydrogen will combine with the oxygen, and form water and precipitate the sulphur; while the ammonia will partially combine with the water, and the rest be absorbed. When the absorbing materials become inert, they are revivified by passing a current of atmospheric air through them, which drives off the volatile gases, and revivifies them. The passage of air is created by connecting, for the time being, the purifyer to a chimney or other exhaust; and the rest of the ammonia is condensed by means of suitable apparatus placed in the pipes leading to the chimney.

3. Mr. Hills proposed to apply the waste heat of distilling retorts to the heating of what he terms "warming retorts," in which the coal is placed prior to its distillation, in order to economise heat in the latter process.

4. To obtain an equable and intermittent supply of the necessary water to gas scrubbers, it is proposed to place above the purifying vessel a reservoir to receive the water from the source of supply. The vessel is made with a long opening at bottom, fitted with a slide valve, on the spindle of which there is a float. The end of the spindle is attached to a tumbling lever. As the water flows in, the float will raise the one end of the tumbling lever to a certain point, when the latter will suddenly fall over to the other side, and jerk open the valve, whereby a sudden but equable supply of water will be admitted to the purifyer. When the outflow of water has brought the float down to a certain point, the tumbling lever will fall and suddenly close the valve.

5. The "improvements in obtaining certain substances applicable to purifying gas" consists in combining the chemical substance, as enumerated under the second head of the specification, with sawdust, breeze, &c., and exposing them to the atmosphere for the purpose of absorbing the oxogen.

JOSEPH PIERRE GILLARD, Paris, gentleman: For certain improvements in the production of heat and light in general.—*Claims:* 1. The production of hydrogen gas by decomposing water in furnaces and retorts serving to distil coal.—2. A process for producing hydrogen gas and a small quantity of oxide of iron.—3. Illuminating by means of electro-magnets put in motion by any mechanical power.—4. Producing hydrogen and oxygen by means of magnets put in motion simultaneously by any suitable power, the two gases being collected in separate vessels.—5. Rendering platina and other unalterable and inoxidizable metals illuminating by the combustion of hydrogen and oxygen.—6. Rendering platina and other non-oxidizable metals more or less illuminating by means of hydrogen, or of hydrogen and oxygen, and also of oxygen and hydrogen combined.—7. Illuminating by heating platina and other metals to a luminous white heat by means of oxygen, burnt either alone or combined with hydrogen.—8. Deoxidising ores by means of hydrogen, or of hydrogen and oxide of carbon, or hydrogen and oxygen combined.—9. A mode of producing pig-iron and purifying metals.

CHARLES BARLOW, Chancery-lane, London: For improvements in the manufacture of a certain pigment. (A communication.) *Claims.*—1. The application of a deoxydizing gas containing carbon to the manufacture of zinc white.—2. A mode of converting impure oxide of zinc into pure zinc white.—3. The use of receivers containing moveable screens in such manufacture.—4. A mode of subliming the arsenic which is contained in the zinc by a peculiar method of heating it.

FRANCOIS JUSTIN DUBURGUET, Cahors, France: For certain improvements in hydro-pneumatic engines. This invention relates to the construction of forcing and lifting-pumps, and other hydro-pneumatic engines, and embraces the application of the syphon for raising water by the rarefication and pressure of the atmosphere.

Claims.—1. Raising water by means of the rarefication and pressure of the air, and its application as a motive power to pumps and other hydro-pneumatic engines.—2. Raising water by means of the syphon from an inferior into a superior basin, and its application as a motive power.—3. A peculiar construction of blast furnace, in which the blast is created by the application of hydrostatic pressure.

CHARLES COOPER, Southampton-buildings, Chancery-lane: For certain improvements in piling, fagotting, and forging iron for plates, bars, shafts, axles, tyres, cannons, anchors, and other similar purposes. These improvements consist—1. In making piles and fagots of bars having the section of a trapezium.—2. In applying these piles to making various articles of manufacture.—3. Making mortars of wrought-iron, by forging them out of piles composed of trapezodical bars, by means of hammers or dies.—4. Manufacturing shafts by placing curvilneal bars round a rod, in order that the lines of junction may be curvilineal, and not in a line radiating from the centre.—5. Making hollow shafts by coiling trapezodical bars round a cast-iron rod, which is afterwards to be melted out.—6. Making cannons of trapezodical bars, twisted in a helical direction round a core.—7. A mode of casting trunnions to cannons so made.—8. Making wheels out of helical coils of trapezodical bars.—9. Rolling the tyres of wheels out of trapezodical bars coiled up helically.

A. ADOR, Paris, France, engineer: For improvements in producing light. Gas is supplied from the top of the apartment into a vessel which contains some hydrocarbon. A pipe which opens at top, above the level of the liquid, passes down through it, and terminates in a second spherical vessel placed above the glass chimney. From the latter vessel two pipes descend to the burner. When the burner is lighted it heats the lower spherical vessel, which, being of metal, transmits the heat to the second spherical vessel, and vapourises the hydrocarbon contained therein. The gas entering this upper vessel mingles with the vapour of the hydrocarbon, and descends with it into the second vessel, where the two are heated before passing to the buener.

Claim.—Combining apparatus for vapourising hydrocarbon with, and intermediate to, a gas burner, and the tube which supplies it with gas.

J. BARRANS, St. Paul's, Deptford, Kent, engineer: For improvements in axles and axle boxes of locomotive engines and other railway carriages.

Claims.—1. Arranging axletrees and axletree-boxes of railway engines and railway carriages, with adjustable apparatus to make up for wear, to prevent prejudicial endway motion. [This apparatus consists of a wedge placed between the end of the axletree and the side of the box, which is forced up between them, as the surface wears away by a screw. The rubbing surfaces are faced with steel, and supplied with some lubricating substance.]—2. A means of preventing grit getting into axletree-boxes [by placing a collar round the axletree, and over that a casting, which is bolted to the box].—3. Arranging axletree-boxes with a receptical to catch the grease.

G. GALLOWAY, of Putney, Surrey, and R. A. PURKIS, of the same place, engineer: For certain improvements in propelling ships and other vessels, also in apparatus for ploughing. The patentees describe and claim—1. Placing two centrifugal pumps in the stern of the vessel, one on each side of the keel, which are constructed like the ordinary blowing fan, and take in water through the centres of the fans from the bows of the vessel, and expel it in two columns at the stern. The outflow pipes are provided with moveable nozzles, which are made to incline in any required direction, to regulate the steering of the vessel, by means of suitable connecting gear leading from the barrel of the wheel on deck.—2. A steam plough, which consists of a triangular frame, having a ratchet wheel at each angle, round which are passed a number of pitch chains fitted on the outside with ploughshares. The frame is supported in a carriage, with its base parallel to the surface of the ground. The locomotive is attached at right angles to the centre of the frame, and communicates rotary motion to one of the ratchet wheels, whereby the ploughs will successively enter and leave the ground after having turned it over.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

E. Pettitt, of Birmingham, civil engineer, for improvements in the manufacture of glass, in the method of forming or shaping and ornamenting vessels and articles of glass, and in the construction of furnaces and annealing kilns.

J. Hickman, of Walsall, Stafford, clerk, for improvements in the manufacture of cylindrical and other tubes.

A. V. Newton, of Chancery-lane, mechanical draughtsman, for improvements in couplings for carriages, and in the attachment of wheels to axles. (Being a communication.)

J. Ashworth, of Rochdale, Lancaster, manufacturer, and T. Mitchell, of the same place, manager, for certain improvements in machinery or apparatus for preparing, spinning, and weaving cotton, wool, and other fibrous materials.

J. Harlow, of Birmingham, for improvements in the manufacture of bedsteads and other articles for setting or reclining on.

E. J. J. Dixon, of the Royal Slate Quarries, Bryntrafood, near Bangor, North Wales, for improvements in the manufacture of sinks and other articles of slate or stone.

W. Radley, chemical engineer, and F. Meyer, oil merchant, both of Lambeth, Surrey, for improvements in treating fatty, oleaginous, resinous, bituminous, and cerous bodies in the manufacture and application of them, and of their components and subsidiary products, together with the apparatus to be employed therein, to new and other useful purposes.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

J. Nasmyth, Patricroft, Lancashire, framing for a portable steam-engine.
J. Sutton, Stamford-street, Blackfriars-road, adjustable inkstand.
J. Harrison, John-street, Fitzroy-square, boudoir piano-forte action.
W. Brodie, Airdrie, tile machine.
M. O. Bergin, Cork, automatic fire-extinguisher.
A. Bird, Birmingham, filter.
J. Davenport, Sheffield, graining coomb.
W. Wright, Kilworth Co., Cork, mill-stone furrows and feeder.
A. Livingston and Son, Portobello, near Edinburgh, hermetical cradle for joining pipes, suitable for water sewerage.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

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HOLYHEAD COMMUNICATION—ABOLITION OF THE VICEROYALTY—UNION OF THE BRITISH ISLES—THE PUBLIC VERSUS THE CITY OF DUBLIN STEAM-PACKET COMPANY.

Price One Penny, or sent by post on receipt of three stamps.

J. Ollivier, 59, Pall-mall.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

JENKYN'S PATENT HYDRAULIC VALVES, FOR MINING, SHIPPING, OR OTHER PUMPS, FOR RAISING AND PUMPING WATER AND OTHER LIQUIDS.—Having obtained a Patent for the invention of that description of valves called Valves for Hydraulic Machines, or any Machines for Raising and Pumping Water and other Liquids, I beg to remark, that I considered for many years that there was something of this kind wanted in deep mines, on account of the great expense of the common valves, which have been in use for many years past, occasioned by the loss of both valves and lifts, which led me to the invention of the above, and which I can most strongly recommend, for their great easement to the engines, works, &c., and also their durability, and other good qualities, as I have seen them repeatedly tested, and which the annexed Testimonials and Orders I have received for them, will fully testify and bear me out, from the time they were first used to the present period.

I shall be happy to give any further information respecting them, and to receive orders for their supply, which shall meet my best attention. RICHARD JENKYN.
No. 1, Glanville-street, Plymouth.

TESTIMONIALS.

Mr. JENKYN,—I am glad to be able to state that there is no comparison to be drawn between your Valves and others which have been tried in the same sett. Yours have been working since the commencement and are still. Please inform what the present price is for the 20-inch Valves. With kind respects. JOHN EVANS, Dowlais.

Mr. JENKYN,—I have used the Patent Valves four years without repair, and have now taken them out, and with little repair will last four years again, if you can get a proper person to put them to work* they will be the best Valves that ever were recommended in Cornwall, and I further add, that I would advise their general use.—[* I have made such improvements that a common pitman can put them in.] T. BLACKWELL, Dowlais.

Mr. JENKYN,—Please to send me four of your Patent Valves, the same size as you sent me last. JOHN EVANS, Dowlais Iron-Works.

Mr. JENKYN,—I herewith send you an order for two of Jenkyn's Patent Valves, the same size as you made for the Cobre Mine, Cuba; I think they were made all of brass—those they have are working very well. JAMES SIMS, Redruth.

Mr. JENKYN,—Your Patent Valves have been at work at these works for about seven years; the lifts are about 40 fathoms high and 20 inches diameter; they work from about three to four strokes per minute, and on an average more than two years without any repairs; the lifts rise a quantity of rubbish on the Valves, and might have worked longer in clear water. SAMUEL TRURAN, Dowlais.

Mr. JENKYN,—The pump you put to work here in Nov., 1849, with your Patent Valves, has been in constant use, day and night, ever since, and as far as the Valves are concerned, to my perfect satisfaction; and considering that the well is between 80 and 90 ft. from the pump, with a lift of nearly 30 feet, especially when the water is low, gives a strong proof of the superiority of your valves over any others I have ever seen tried. FRANCIS WARREN, Stowford Paper Mills, Ivy-bridge, Devon.

Mr. JENKYN,—Having had several opportunities of witnessing the superiority of your Patent Valves, which I have no doubt will ultimately supersede all others, I have much pleasure in recommending them for all mining purposes, and for any work where heavy pumping is required; and I feel assured they will be found far more economical than any other valves now in use on the old principle. JOHN E. MARE,
Plymouth Foundry, Hammer Mills, and Engine-Works.

N.B.—Other testimonials can be produced.

CONSIDERABLE SAVING IN FUEL.—IMPORTANT IMPROVEMENT IN THE DOMESTIC COOKING STOVE.—This design has for its object an improved formation of the Oven of the Domestic Cooking Stove, in such manner that it shall be more quickly and readily heated and kept ready for use, than by the formation hitherto adopted. The improvement consists in a different adaptation of the flues round the oven. The latter is divided into two portions by a flue which passes between them, thus really forming two ovens. Supposing the fire-grate to be on the left side of the ovens, the fire keeps up a great degree of heat against the left side of the upper oven, but not sufficient to burn it, there being a space between opening to the flues; the current of flame and heated products of combustion then pass along the top of the upper oven, down its right-hand side, along its lower part, from right to left, being between the upper and lower ovens; down the left side of the latter, along its lower surface, from left to right, and up its right side, where it passes off into the chimney. By this arrangement it will be seen that the top, bottom, and both sides of both ovens are effectually open to the draft, and must become thoroughly heated in a very short period. The following few, from many, Testimonials bear witness to the thorough success of this simple but improved arrangement. JOSIAH SIMS, Inventor and Proprietor, Tavistock. *Licenses granted.—All orders promptly executed.*

TESTIMONIALS.

Mr. SIMS,—I have great pleasure in bearing testimony to the great improvement made in my stove by your Improved Oven being added to it: the time required for baking being less than half, and can clearly say the saving in fuel is full 50 per cent. I shall be glad at all times to show it to any persons desirous of seeing it.
THOMAS NICHOLLS, Bedford Iron-Works, Tavistock.

Mr. SIMS,—In reply to your question as to the answering of, and benefit derived from the alteration of my oven to your principle, I beg to say, that we find that one-half the coals will dress a large joint better and quicker than on the old plan: the oven I previously had was considered a very good one. I must also add, that it may be regulated to the greatest nicety by attention to the dampers, so as to suit poultry, &c.
J. L. COMMINS, Brook Cottage, Whitchurch.

Mr. SIMS,—From the experience I have had from putting in your Improved Registered Stoves, and seeing a considerable saving of fuel, I have gone to the expense of having one for my own use, and find a saving of one-half the coals.
RICHARD H. YELLAND, Builder, Tavistock.

Mr. SIMS,—I am proud to be able to say that your Improved Register Stove sent me answers every thing as you represented; and I am at a loss to know how such a simple, but effectual, improvement should have been so long dormant. W. NEWTON, Mill-hill.

Mr. SIMS,—I am fully convinced of the advantage derived from your Improved Cooking Stove, and have found the meat, bread, &c., for my family has been cooked cheaper and better than by sending it to a common oven, and could, therefore, most confidently recommend it to the public, as the most economical that has ever come under my notice.
WM. JOHN JAMES, Tin-plate Worker, Exeter-street, Tavistock.

Mr. SIMS,—Having been informed by many respectable inhabitants of this neighbourhood (Tavistock), that the improvement made in your Registered Stoves has surpassed their expectations, I immediately availed myself of getting one on a large scale to prove the experiment effectually; and I am proud to add my testimony to the very unexpected results I have experienced, both in the saving of fuel as well as its efficiency; therefore, I feel no hesitation in asserting that it behoves every one that has the means of providing the remedy (which I must say is inexpensive in itself, and a decided improvement to any yet before represented to the public). J. CARPENTER, Anderton Cottage.

THE PATENT OFFICE AND DESIGNS REGISTRY.
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Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

THE MINING ALMANACK for 1850: compiled and arranged by HENRY ENGLISH, Mining Engineer, &c. Under the especial sanction and patronage of H.R.H. PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.—THE SECOND VOLUME will appear early in JUNE NEXT, with ADDITIONAL TABLES and STATISTICS, connected with the Mining Interests.—Names of subscribers are requested to be addressed to Mr. H. English, 25, Fleet-street.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—East Adairs Main 11—Hastings Hartley 13 3—Holywell 14 6—Tanfield Moor 13—Tanfield Moor Butes 12 9—West Wylam 13—Wall's-End Acorn Close 14 9—Hetton 16 6—Jonassohn 13 3—Lumley 14 6—Stewart's 16 6—West Kelloe 14 6—Whitworth 12 9—Cowndon Tees 14—Maclean's Tees 13 6—South Durham 14—West Cornforth 14—Cowpen Hartley 13 6—Hartley 12 6 and 12 9—Howard's West Hartley Netherton 13 6—Nixon's Merthyr and Cardiff 20—Sidney's Hartley 13 6—Whitworth Coke 20 6—Creswell 15.—Ships at market, 61; sold, 51.

WEDNESDAY.—East Adair's Main 11 6—Hastings Hartley 13 6—Holywell 14 6—Tanfield Moor 13 3—Tanfield Moor Butes 12 9—Wylam 13 6—Hartley 12 9—Nixon's Merthyr and Cardiff 20—Sidney's Hartley 13 6—Walls'-End Riddell 14—Richmund 14 3—Whitwell 14 3—Kelloe 15 3—Whitworth 12 9—Seymour Tees 13 9—Ships, 18; sold 15.

FRIDAY.—Bate's West Hartley 12 6—Carr's Hartley 13—Chester Main 13—East Adair's Main 11—North Percy Hartley 12 6—Old Tanfield 12—Ord's Main 13 6—Ravensworth West Hartley 13—South Pearoth 12—Tanfield Moor 13—Tanfield Moor Bute's 12 6—Walker Primrose 11 6—West Hartley 13 6—West Wylam 13 3—Wylam 13 9—Wall's-End Bewicke and Co. 14—Gosforth 13 9—Gibson 12 9—Harton 13 9—Heaton 13 9—Hedley 13 6—Hilda 13 3—Northumberland 13 3—Eden Main 15—Lambton Primrose 15 3—Hetton 16 3—Haswell 16 3—Kepier Grange 15 6—Lambton 15 9—Lumley 14 6—Russel's Heton 16—Stewart's 16 3—Whitwell 14—Caradoc 15—Cassop 15—Denison 13 6—Heugh Hall 14 3—South Hartlepool 15—Thornley 15—West Hetton 14 3—Whitworth 12 6—Adelaide Tees 15 6—Brown's Deanery 14—Cowndon Tees 14—Maclean's Tees 13 3—Seymour Tees 13 9—South Durham 14—Tees 16 3—Cowpen Hartley 13 6—Hartley 12 6 and 12 9—Howard's West Hartley Netherton 12 6—Nixon's Merthyr and Cardiff 21—Whitworth Coke 20.—Ships at market, 220; sold, 164.

IMPROVED LIFTING JACKS.

IMPROVED RATCHET JACK.

HALEY'S PATENT LIFTING JACK.

MANUFACTURED BY

W. AND J. GALLOWAY,

PATENT RIVET WORKS,

MANCHESTER.

*** The attention of parties who employ

Lifting Jacks,

is respectfully requested to the superiority of those annexed, over those hitherto in use.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

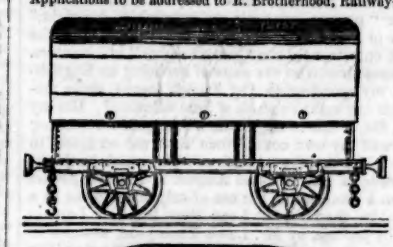
IMPORTANT TO RAILWAY COMPANIES, CARRIERS, AND OTHERS.

ROWLAND BROTHERHOOD'S TILT, for COVERING RAILWAY TRUCKS, WAGGONS, &c.

This invention allows of trucks or waggons being covered or uncovered with surprising ease and facility, so that one porter can uncover two trucks in the space of a minute, and two can re-cover both in the same time. It allows of a small portion, or the whole area of the truck, being uncovered, and affords great facility for loading and unloading, and protecting the goods in these operations, as well as in the course of transit. It can be secured by locks and keys, thus rendering merchandise secure from plunder. It is cheap in its construction, can be applied to railway trucks and waggons generally, and is easily attached or detached. It runs smoothly through the air at high speeds and against head winds.

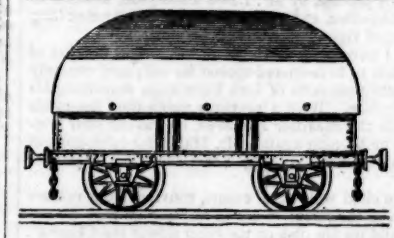
This Tilt has been in use on different parts of the broad guage during the winter, and has been found to work remarkably well in the severest weather. Experienced and practical persons, who have the management of large goods' stations, and have seen these tilts in working, and who know the great wear and tear of cloths, tarpauling, &c., and the inconvenience of existing modes for goods' covering, are of opinion that these Tilts will be of great utility in railway service. The patentee is himself prepared either to construct, or, on moderate terms, to license parties to construct his patent Tilts.

Applications to be addressed to R. Brotherhood, Railway-Works, Chippenham, Wilts.



No. 1.

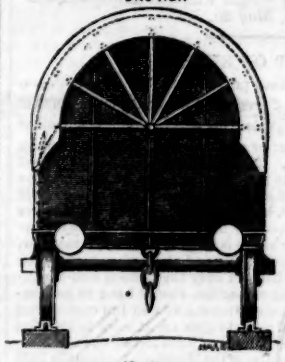
This shows the side elevation of a waggon, with the tilt closed and fastened down.



No. 2.

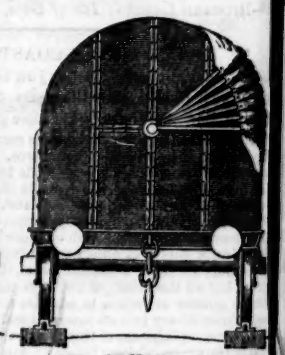
This shows the tilt applied to a box, waggon or long-sided truck, with longitudinal bearers.

END VIEW



No. 3.

This is an end elevation of the same on a larger scale, showing the pin and fan which supports and carries over the longitudinal bearers to which the cloth is attached, and which when open lies compactly folded along the side of the truck, leaving the whole area of the truck open for receiving or discharging its contents by crane or otherwise.



No. 4

This is an end elevation of the same, showing the tilt partially closed, so that the whole or any portion of the truck can be open at pleasure, affording means of protection for part of the merchandise, whilst the other is being loaded or unloaded, or the truck may be used entirely uncovered, without the tilt in the least interfering.

The tilt is applied to box, or low-sided trucks, with curved longitudinal bearers.

SEWERAGE OF LONDON.—The ATTENTION of the COMMISSIONERS appointed to determine upon the MOST EFFICIENT MATERIAL for the CONSTRUCTION of the SEWERS OF LONDON, is particularly directed to the ASPHALTE OF SEYSSEL, which more than any other material is applicable to the CONSTRUCTING and INTERNAL COATING of BRICK CULVERTS and OTHER CHANNELS for DRAINAGE.

The experiments made by the Royal Artillery on the embrasures of Plymouth Citadel, constructed of Seyssel Asphalte Brickwork, under the orders of the Hon. Board of Ordnance, have fully proved the superiority, adhesiveness, and strength of Seyssel Asphalte over all other cementitious compositions. A printed account of these experiments can be had on application to J. FARRELL, Secretary.
Seyssel Asphalte Company—"Claridge's Patent"—Established 1838.

Note.—The application of the Asphalte of Seyssel is specially recommended by the Commissioners on the Fine Arts for covering the ground line of brickwork in many situations, and it has been suggested that it would be peculiarly applicable for covering the *areas* of closed *grave yards*, and for the construction of *catacombs*.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

MASTERS & CO., ORIGINAL INVENTORS and SOLE PATENTEES of the following SCIENTIFIC and USEFUL INVENTIONS, beg to call the attention of the Nobility and Gentry to their latest discovery in the preparation of SODA WATER, &c. &c., by their

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By the aid of which Soda Water, and all aerated waters, can be made and fully charged with carbonic acid gas in a few minutes, and the flattest Beer or Wine can be made to brilliantly sparkling as Champagne in an equally short time, and the expense mere nothing.—Price of machine, 30s. and upwards, which needs only be seen to be appreciated. Adapted for shippers to every climate. Also,

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Every description of APPARATUS for PRODUCING ICE ARTIFICIALLY.

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Which will clean and polish, equal to new, 12 knives in one minute, without noise or dust.

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THE TEETH—DENTAL SURGERY.—Mr. GAVIN, SURGEON DENTIST, 33, SOUTHAMPTON-STREET, STRAND, begs to call the attention of his patients and the public generally to his recent important improvement in ARTIFICIAL TEETH, and to his perfect and painless system of fixing them in the mouth, by which successful and scientific principle the removal of roots, or any painful operation whatever, is entirely obviated. Old pieces of teeth, or misfits remodelled and adapted to the mouth with security and comfort. Mr. Gavin begs also to state, that, notwithstanding his late invaluable improvements in dental science, he still insures the same moderate charges and successful treatment which have procured him such extensive patronage.—A single tooth ..... from £0 5
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Stopping carious teeth with a cement which does not discolour .. 0 2
Consultation free.—No. 33, SOUTHAMPTON-STREET, STRAND, opposite the newspaper office.

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